

THANK YOU!!!!

We appreciate your participation in the field work, generosity with work site locations, and your input so far. We hope you will continue to work with us.

We have received an ordinary high water evaluation from Mr. Bill Tilton. Have other evaluations been done? Can we get copies?

We have been asked about the presence of moss in this evaluation---that is being further researched by DNR, but we would appreciate any additional information that others might have.

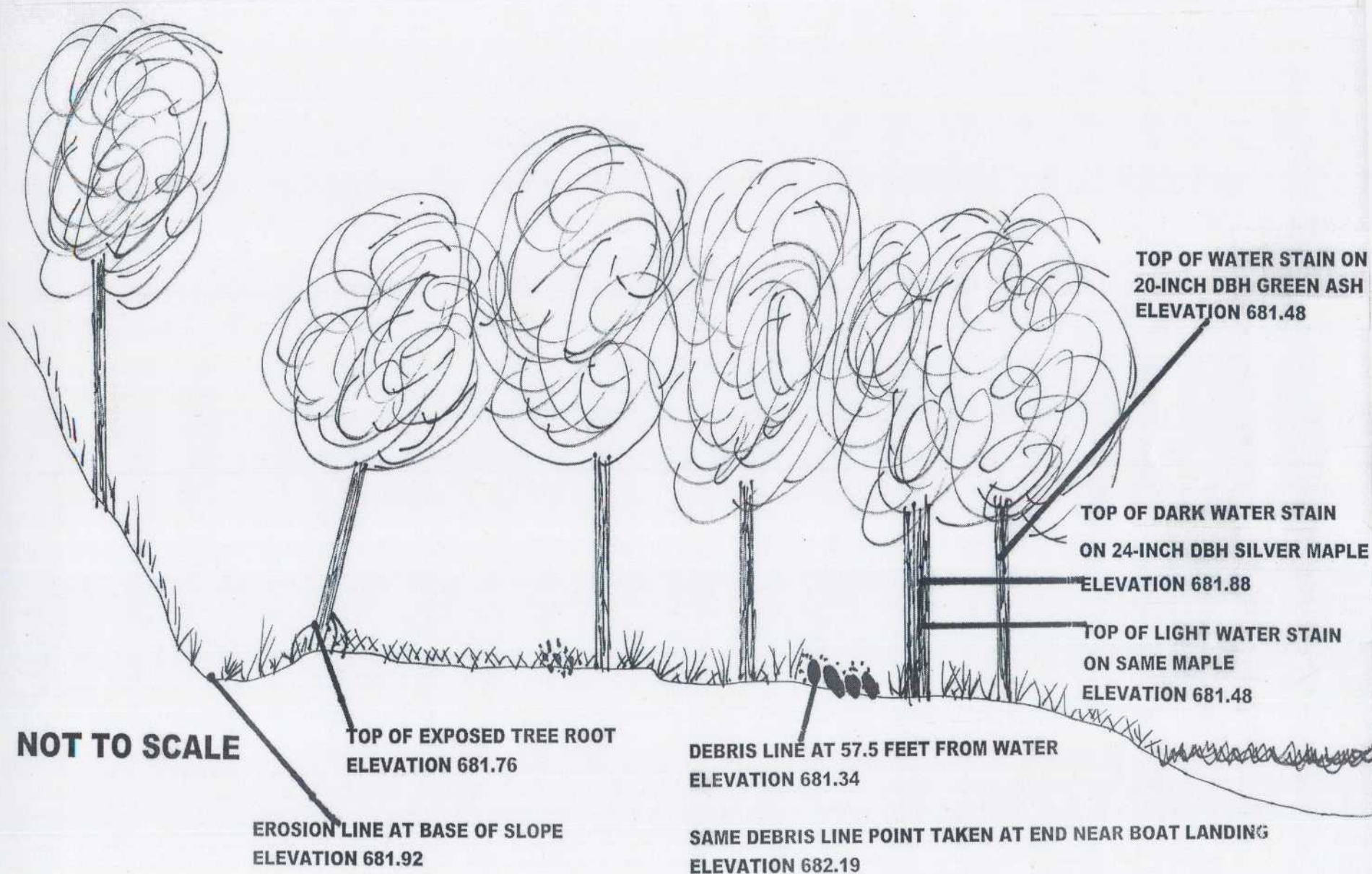
What constitutes a disturbed site? We have been discussing this as we have progressed, but we would appreciate any additional input about this.

We would also appreciate your input about the work that has been done.

HYDRIC SOILS BEGINNING AT WATER LEVEL TO BASE OF SLOPE

**HYDROPHYTIC VEGETATION BEGINNING AT WATER LEVEL TO
BASE OF SLOPE**

C.03
18P2
TWIN SPRINGS-TRANSECT 1
WATER LEVEL 678.80 @ 10:15 AM
MAY 19, 2005



20F2

ON JULY 12, 2005, WE WERE ALSO ABLE TO SURVEY THE PHYSICAL INDICATORS IN THE AREA IMMEDIATELY SOUTH OF OUR TRANSECT LINE THAT WE COULD NOT SURVEY ON MAY 19, 2005. THESE ARE LISTED AS FOLLOWS:

**TOP OF WATER STAIN ON 7-INCH DBH SILVER MAPLE
ELEVATION 682.25**

**TOP OF WATER STAIN ON 4-INCH DBH SILVER MAPLE
ELEVATION 682.26**

**TOP OF WATER STAIN ON 8-INCH DBH SILVER MAPLE
ELEVATION 682.64**

**BOTTOM OF WATER STAIN ON SAME 8-INCH SILVER MAPLE
ELEVATION 682.45**

**GR AT BASE OF 8-INCH DBH SILVER MAPLE
ELEVATION 680.40**

**DEBRIS ON 10-INCH DBH SILVER MAPLE FROM RECENT
HIGH WATER
ELEVATION 681.39**

**TOP OF MOSS ON ABOVE MAPLE
ELEVATION 681.77**

**TOP OF WATER STAIN ON ABOVE MAPLE
ELEVATION 682.26
GR AT BASE OF ABOVE MAPLE
ELEVATION 679.56**

TS1

C.04

Soil pit @ 10 feet from 0 (0 is water's edge that day)
0-6 Gley 1, 2.2/10Y—free water

Soil pit @ 20 ft from 0
0-6 7.5YR 3/2
6-12 7.5 YR 2.5/1---free water

Soil pit @ 30 ft from 0
0-6 7.5 YR 3/2
6-12 7.5 YR 2.5/2---free water

Soil pit @ 40 ft from 0
0-6 7.5 YR 4/3
6-12 7.5 YR 3/2
12-18 7.5 YR 2.5/2---free water

Soil pit @ 70 ft from 0
0-2 10 YR 2/1
2-5 10 YR 7/3 with mottles, mottles are 7.5 YR 5/6
5-10 10 YR gley 1 6/N

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State v. Grant, 139 Wis. 2d 45. Concur.

does not address what has turned out to be the major legal issue presented in the case.

WILLIAM G. CALLOW, J. (*concurring*). Although I agree with the result reached by the majority, I write separately to express my concern with this court's prior adoption, in *State v. Dyess*, 124 Wis. 2d 525, 370 N.W.2d 222 (1985), of a single test for harmless error. In *Dyess* this court adopted a rule recognizing there was but a single test for harmless error without that issue having been raised, briefed, or argued by the parties. Because of the circumstances under which the single test for harmless error was adopted, I believe the test for harmless error is ripe for review.

I do not join Justice Day's concurrence because I reserve judgment on the proper harmless error test until this court is presented with a case in which the validity of the *Dyess* harmless error test is properly raised.

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State v. Trudeau, 139 Wis. 2d 91

STATE of Wisconsin, Plaintiff-Appellant,

v.

Thomas D. TRUDEAU, Trudeau Development, Inc., Trudeau Construction, Inc., Superior Development, Inc., Defendants-Respondents-Petitioners,

The ASHLAND COUNTY BOARD OF ADJUSTMENT, Larry Hildebrandt, Ashland County Zoning Administrator, Defendants-Respondents. †

Supreme Court

No. 85-0818. Argued April 28, 1987.—Decided June 11, 1987.

(Review of a decision of the court of appeals.)

(Also reported in 408 N.W.2d 337.)

1. Nuisances § 63*—abatement of public nuisances—floodplain zoning violations—cause of action of state. State, by attorney general, is authorized to bring actions to enjoin public nuisance whenever there exists violation of any local floodplain zoning ordinance, since to regard certiorari as exclusive means of review would render language of statute authorizing such abatement as meaningless, which is construction courts should avoid (Stats § 87.30(2)).
2. Navigable Waters and Navigation § 67*—lakebeds—title. Title to lakebeds passed to state upon statehood.
3. Appeal and Error § 869*—findings of trial court—facts fitting legal standard—question of law.

† Motion for reconsideration denied.

* See Callaghan's Wisconsin Digest, same topic and section number.

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Question of whether facts in particular case fulfill particular legal standard is question of law which reviewing court will review.

4. Trial § 25*—discussion of court—mistaken view of law—basis of decision.

Where trial court bases its decision on mistaken view of law, its decision constitutes abuse of discretion as matter of law.

5. Navigable Waters and Navigation § 1*; Waters § 2*—lakebed—navigability—necessity.

In order to be considered lakebed, area need not be navigable and may be heavily vegetated by plants rising far above water.

6. Waters § 88*—public trust—rights.

Rights Wisconsin citizens enjoy with respect to bodies of water held in trust by state include enjoyment of natural scenic beauty as well as purposes of navigation, swimming and hunting.

7. Waters § 86*—lakebed title—ordinary high water mark—determination.

In action by state against developers for violation of floodplain zoning ordinance, trial court erred in holding that property upon which development was constructed was not lakebed, where there was positive and uncontradicted testimony as to level of ordinary high water mark of Lake Superior, that project site was and is hydraulically connected to and is in fact part of Lake Superior and where trial court failed to make any findings as to various elevations of project site.

REVIEW of a decision of the Court of Appeals.
Affirmed.

For the defendants-respondents-petitioners there were briefs by *Samuel J. Recht, David L. Peterson, Susan LaCava, Quarles & Brady, Milwaukee, Ronald*

* See Callaghan's Wisconsin Digest, same topic and section number.

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E. Martell, Gregory M. Bistram, Timothy C. Cook and Moore, Costello & Hart, St. Paul, MN, and oral argument by Samuel J. Recht and Ronald E. Martell.

For the plaintiff-appellant the cause was argued by *Thomas L. Dosch*, assistant attorney general, with whom on the brief was *Bronson C. La Follette*, attorney general.

STEINMETZ, J. The first issue as presented by the parties is whether the land lying below the ordinary high water mark (OHWM) of Lake Superior, which is naturally subject to the flow of water to and from the lake, is part of the bed of Lake Superior even though the water which inundates the site is not navigable. The Ashland county circuit court, the Honorable William E. Chase, held that the disputed property was not lakebed because the plaintiff, state of Wisconsin, failed to prove that the condominium project site was navigable. The court of appeals, in an unpublished decision, reversed holding that the actual navigability of the site is irrelevant if the land lies partly under the OHWM of Lake Superior and found, on the basis of what it termed positive, uncontradicted testimony, that the site is partly the bed of Lake Superior because it is naturally below the ordinary high water mark of the lake and subject to the ebb and flow of the lake.

The second issue is whether the court of appeals committed error in supplementing the findings of the trial court on the issue of the natural connection of the project site to Lake Superior. The trial court failed to make any findings on the relative elevations of the project site and the ordinary high water mark of Lake Superior. Although the trial court found that the project site was subject to inundation by water from

Lake Superior, it dismissed the state's lakebed claim on the basis that the site was not navigable. The court of appeals found that there was evidence that part of the site was under the OHWM of Lake Superior and that there was a water connection between the site and the lake with water flowing between the site and lake, and, therefore, remanded the case to the trial court to determine what part of the site if any is below the OHWM.

The third issue is whether doctrines of accretion or reliction have any application to a dispute over land not submerged by the waters of Lake Superior when those waters reached the elevation of the lake's ordinary high water mark. The trial court found that the doctrine of reliction operated to give title to the defendants, Thomas D. Trudeau, Trudeau Development, Inc., Trudeau Construction, Inc., and Superior Development, Inc., real estate developers, because the connection of the site to the lake had receded to the point of rendering use of the land as an incident of navigation improbable. The court of appeals held that the doctrine of reliction has no application to the submerged lands.

The fourth issue is whether under the facts of this case certiorari review under sec. 59.99, Stats.,¹ is the

¹Sec. 59.99(1) and (10), Stats., provides:

"59.99 County zoning, adjustment board.
(1) APPOINTMENT, POWER. The county board may provide for the appointment of a board of adjustment, and in the regulations and restrictions adopted pursuant to sec. 59.97 may provide that such board of adjustment may, in appropriate cases and subject to appropriate conditions and safeguards, make special exceptions to the terms of the ordinance in harmony with its general purpose and intent and in accordance with general or specific rules therein contained. Nothing in this subsection shall preclude the granting of special exceptions by the county zoning

state's exclusive means of challenging a floodplain zoning variance. The trial court held that certiorari review was the state's exclusive means of challenging a decision to grant a floodplain zoning variance and found that the state had failed to pursue review within the time provided by the statute. The court of appeals held that sec. 87.30(2),² provided the state with

agency designated under sec. 59.97(2)(a) or the county board in accordance with regulations and restrictions adopted pursuant to sec. 59.97 which were in effect on July 7, 1973 or adopted after that date."

"(10) CERTIORARI. Any person or persons, jointly or severally, aggrieved by any decision of the board of adjustment, or any taxpayer, or any officer, department, board or bureau of the municipality, may, within 30 days after the filing of the decision in the office of the board, commence an action seeking the remedy available by certiorari. The court shall not stay proceedings upon the decision appealed from, but may, on application, on notice to the board and on due cause shown, grant a restraining order. The board of adjustment shall not be required to return the original papers acted upon by it, but it shall be sufficient to return certified or sworn copies thereof. If necessary for the proper disposition of the matter, the court may take evidence, or appoint a referee to take evidence and report findings of fact and conclusions of law as it directs, which shall constitute a part of the proceedings upon which the determination of the court shall be made. The court may reverse or affirm, wholly or partly, or may modify, the decision brought up for review."

²Section 87.30(2), Stats., provides as follows:

"(2) ENFORCEMENT AND PENALTIES. Every structure, building, fill, or development placed or maintained within any floodplain in violation of a zoning ordinance adopted under this section, or sec. 59.97, 61.35 or 62.23 is a public nuisance and the creation thereof may be enjoined and maintenance thereof may be abated by action at suit of any municipality, the state or any citizen thereof. Any person who places or maintains any structure, building, fill or development within any floodplain in violation of a zoning ordinance adopted under this section, or sec. 59.97, 61.35 or 62.23 may be fined not more than \$50 for each

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an alternative means of challenging a floodplain zoning variance.

This action concerns a parcel of land being developed for a 48-unit, eight-building, residential condominium project. Six of the units in one building were constructed prior to the commencement of this action and substantial sums of money have been invested in the project.

The state of Wisconsin commenced this action on August 16, 1984. The various claims in the amended complaint relate to two sets of parties: a group of real estate developers and several local zoning officials or agencies. The Ashland County Board of Adjustment, Larry Hildebrandt, Ashland County Zoning Administrator and Thomas D. Trudeau, Trudeau Development, Inc., Trudeau Construction, Inc. and Superior Development, Inc. (the developers) were alleged to have violated sec. 30.12, Stats.³ by allowing construc-

offense. Each day during which such violation exists is a separate offense."

³Sec. 30.12(1)(b), (2), (3)(a) 4 and (b), Stats., provides in relevant part:

"30.12 Structures and deposits in navigable waters prohibited; exceptions; penalty. (1) GENERAL PROHIBITION. Except as provided under sub. (4), unless a permit has been granted by the department pursuant to statute or the legislature has otherwise authorized structures or deposits in navigable waters, it is unlawful:

"...
"(b) To deposit any material or to place any structure upon the bed of any navigable water beyond a lawfully established bulkhead line.

"(2) PERMITS TO PLACE STRUCTURES OR DEPOSITS IN NAVIGABLE WATERS; GENERALLY. The department, upon application and after notice as provided under sec. 31.06 and hearing, may grant to any riparian owner a permit to build or maintain for

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tion and constructing condominiums and a parking lot on the bed of Lake Superior.

The developers obtained a variance at a hearing before the Ashland County Board of Adjustment on January 13, 1984. The state did not seek review of the decision pursuant to sec. 59.99(1), Stats., within 30 days. The state later commenced an action against the developers alleging that the construction was not, could not have been, authorized and lawful. The trial court dismissed all of the state's claims after a trial.

According to the state, the first meeting regarding the site was on November 1, 1983, at the site. After being discouraged by the Department of Natural Resources (DNR) representative, the developers withdrew their existing plans. The DNR did not receive any other plans. The next the DNR heard of the matter was when it was notified of the variance hearing before the Ashland County Board of Adjust-

the owner's use a structure otherwise prohibited by statute, if the structure does not materially obstruct navigation or reduce the effective flood flow capacity of a stream and is not detrimental to the public interest. The procedures in this subsection do not apply to permits issued under sub. (3).

"...
"4. Place crushed rock or gravel, reinforced concrete planks, adequately secured treated timbers, cast in place concrete or similar material on the bed of a navigable stream for the purpose of developing a ford if an equal amount of material is removed from the stream bed.

"(b) A person who seeks to place structures or deposits under par. (a) shall apply to the department for a permit. The department shall review the application and inspect the location involved. The department may disapprove the application if it finds the proposed structure or deposit will materially impair navigation or be detrimental to the public interest. The department shall issue the permit or notify the application in writing of the disposition of the application."

ment in January, 1984. By that time, the project pilings were in, walls were up and deck floors were in so that the variance was granted after the fact of partial construction.

The state requested injunctive relief requiring the removal of structures found to be in violation of sec. 30.12, Stats., or local zoning ordinances, the prohibition of further construction on the lakebed, and an order vacating the land use permit and floodplain zoning variance given to the developers.

The controversy concerns a real estate development known as the Marina Point Condominiums on Madeline Island in Ashland county, Wisconsin. The developers' plans are to build 48 condominiums in a series of clusters. The first set of six condominiums, known as Cluster A, has already been built and the units placed for sale. The building site is immediately across Old Fort Road from the Madeline Island marina and immediately south of Mondamin Trail. A golf course is adjacent to the site on its inland side. Cluster A has been built on stilt-like pilings and much of the land underlying the structure and the remainder of the site is covered by standing water which was as deep as 1.2 feet in October, 1984. The water on the site is connected by several culverts to Lake Superior, at least one running under Old Fort Road into the marina and another running under Mondamin Trail. (See Exhibit 1 attached to this opinion.)

There is generally some water on the project site and some aquatic-type vegetation. The project site itself is not "navigable" in the sense of paddling a canoe. The source of the water on the property is not entirely clear. There was evidence received that 1.3 million gallons of water per week drained from the golf course onto the project site in the summer. Water

also came through the culverts from Lake Superior when high winds arose. Both parties agree the culverts' purpose was to allow water to drain to Lake Superior rather than accumulate on the project site. The state argues that the culverts were not placed under the Old Fort Road to flood the developers' project but to allow water accumulating there to reach the lake. If the culverts were not there, it is argued the project site would flood and run across the road to Lake Superior or the site would accumulate water and become lakebed itself.

The trial court found that water flows both ways through these culverts, sometimes draining the Marina Point Condominiums site into the main body of Lake Superior and sometimes further flooding the site with water coming in from the marina.

The trial court made no finding as to the elevation of the ordinary high water mark (OHWM) of Lake Superior or of the elevations of the surface of the water or the underlying land at the Marina Point Condominiums site as compared to the OHWM of Lake Superior. The trial court found there was "no distinct mark on the project property" and that the disputed property was separated from Lake Superior as a navigable body of water by Old Fort Road, an artificial barrier. The state introduced the only evidence regarding the OHWM of Lake Superior.

[1]

Contrary to the developers' argument, sec. 59.99(10), Stats., is not the exclusive means of state jurisdiction over floodplain zoning. Section 87.30 and sec. NR 116.22(4), Wis. Adm. Code, provide that the state may seek abatement of violations of floodplain

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zoning.⁴ Section 87.30(2) establishes a cause of action to enjoin a public nuisance whenever there exists a violation of any local floodplain zoning ordinances. The state of Wisconsin, by the attorney general, is authorized to bring actions to enjoin such nuisances. To regard certiorari as the exclusive means of review would render the language of sec. 87.30(2), Stats.,

⁴Sec. NR 116.22(4), Wis. Adm. Code provides as follows:

"(4) ENFORCEMENT. The department shall assist municipalities in achieving a consistent statewide approach to floodplain enforcement. This assistance may include, but is not limited to, the measures listed in this subsection.

"(a) The department may request that corrective action be taken by the municipality where construction is occurring in a floodplain area which is either contrary to an existing floodplain zoning ordinance or which would be contrary to an approved floodplain zoning ordinance. Such corrective action may include, where appropriate, the following:

"1. Active prosecution of violations of the floodplain zoning ordinance;

"2. An injunction to stop construction until an adequate floodplain zoning ordinance can be adopted and approved by the department; and

"3. Adoption of an adequate floodplain zoning ordinance and submittal to the appropriate department district office for approval.

"(b) The department may seek an injunction to stop construction in the floodplain area until an adequate floodplain zoning ordinance is adopted and approved.

"(c) The department may seek an injunction to stop construction in the floodplain area when the construction would violate an approved floodplain zoning ordinance or the provisions of this chapter.

"(d) The department may seek adoption of an adequate floodplain zoning ordinance in accordance with the provisions of sec. 87.30(1), Stats., or an upgrading of a floodplain zoning ordinance in accordance with s. NR 116.05.

"(e) The department may seek an injunction for abatement or removal or a fine or both for any violation of a floodplain zoning ordinance in accordance with sec. 87.30(2), Stats."

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meaningless which is a construction the courts should avoid. *Associated Hospital Service v. Milwaukee*, 13 Wis. 2d 447, 463, 109 N.W.2d 271 (1961).

Section 30.12 and ch. 30, Stats., generally codify a number of common law doctrines regarding the ownership of the beds of navigable waters. This court stated in *Illinois Steel Co. v. Bilot*, 109 Wis. 418, 425, 84 N.W. 855 (1901):

"The title to the beds of all lakes and ponds, and of rivers navigable in fact as well, up to the line of ordinary high-water mark, within the boundaries of the state, became vested in it at the instant of its admission into the Union, in trust to hold the same so as to preserve to the people forever the enjoyment of the waters of such lakes, ponds, and rivers, to the same extent that the public are entitled to enjoy tidal waters at the common law." (Emphasis added.) See also *State v. McDonald Lumber Co.*, 18 Wis. 2d 173, 176, 118 N.W.2d 152 (1962).

This is as true of the beds of the Great Lakes as it is of lesser inland waters.

In *Muench v. Public Service Comm.*, 261 Wis. 492, 501-02, 53 N.W.2d 514, 55 N.W.2d 40 (1952), the court stated:

"At an early date in its history the Wisconsin court put itself on record as favoring the trust doctrine, that the state holds the beds underlying navigable waters in trust for all of its citizens, subject only to the qualification that a riparian owner on the bank of a navigable stream has a qualified title in the stream bed to the center thereof."

[2]

Title to the lakebeds passed to the state upon statehood. *Pollard's Lessee v. Hagan*, 44 U.S. (3 How.) 212, 230 (1845) stated:

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determine whether a given stage of water is above or below ordinary high-water mark."

"In *McDonald* it was stated that the state's title to the lake bed runs to the ordinary high-water mark." (Footnotes omitted.)

The trial court did not make a finding whether the site was connected by water to Lake Superior; however, the trial judge did make this observation, "sometimes water goes into the culvert ... from the marina onto the project property and sometimes it flows out from the project property"

Knitter analyzed several aerial photographs of the site as it existed in 1939 and 1950, the government survey maps, the site's present configuration, and stereo photographs offering a three-dimensional view of the site indicating elevation and from these sources he concluded that the project site was originally part of the basin, which was enlarged to become the present marina. The developers' expert did not directly refute this evidence.

When the physical facts are unquestionably established, testimony to the contrary must give way. *Pappas v. Jack O. A. Nelsen Agency, Inc.*, 81 Wis. 2d 363, 369, 260 N.W.2d 721, 724 (1978). In *Thiel v. Damrau*, 268 Wis. 76, 85, 66 N.W.2d 747, 752 (1954), the court stated: "Positive uncontradicted testimony as to the existence of some fact, or the happening of some event, cannot be disregarded by a court or jury in the absence of something in the case which discredits the same or renders it against the reasonable probabilities."

[7]

The positive and uncontradicted testimony of Knitter that the OHWM of Lake Superior is 602

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I.G.L.D. and that the project site was and is hydraulically connected to and is in fact a part of Lake Superior is not discredited nor against reasonable probability. The erection of the artificial barrier, the Old Fort Road, with culverts between the site and the marina does not remove the site as part of Lake Superior. As long as lake water would naturally flow to and from the site in the absence of an artificial barrier, it is a part of Lake Superior. The state therefore properly determined the lake's OHWM at "other places on the ... shore of the same ... lake" and transferred that finding to the project site. *Diana Shooting Club*, 156 Wis. at 272.

The state claims about half of the site is below 602 feet I.G.L.D. The developers' surveyor, while originally agreeing, later claimed that all of the site was above the 602 feet OHWM. The trial court did not resolve conflicts as to the elevations on the site.

We affirm the court of appeals and therefore remand the case to the trial court for findings as to the various elevations of the project site. Any part of the site at or below 602 feet I.G.L.D. is within the OHWM of Lake Superior and is therefore protected lakebed upon which building is prohibited. Any part of the site above 602 feet is still within the floodplain of Lake Superior and falls within the county's jurisdiction.

The board did not and could not properly grant the developers a floodplain variance as to any part of the site below the OHWM of Lake Superior. Ashland county adopted a floodplain ordinance pursuant to secs. 59.97 and 87.30, Stats. The board may grant a variance only if the grant "will not be contrary to the public interest" and "owing to special conditions, a literal enforcement ... would result in unnecessary hardship." Ashland County Flood Plain Zoning Ordi-

"First, The shores of navigable waters, and the soils under them, were not granted by the Constitution to the United States, but were reserved to the states respectively. Secondly, The new states have the same rights, sovereignty, and jurisdiction over this subject as the original states."

Section 30.12, Stats., is a codification of the common law restriction against encroachments on publicly held lakebeds. See *Hixon v. Public Service Comm.*, 32 Wis. 2d 608, 616, 146 N.W.2d 577 (1966).

We have distinguished between state owned lakebed and the uplands⁵ capable of private ownership in *Diana Shooting Club v. Husting*, 156 Wis. 261, 272, 145 N.W. 816 (1914) when we stated:

"By ordinary high-water mark is meant the point on the bank or shore up to which the presence and action of the water is so continuous as to leave a distinct mark either by erosion, destruction of terrestrial vegetation, or other easily recognized characteristic. *Lawrence v. American W. P. Co.*, 144 Wis. 556, 562, 128 N.W. 440. And where the bank or shore at any particular place is of such a character that it is impossible or difficult to ascertain where the point of ordinary high-water mark is, recourse may be had to other places on the bank or shore of the same stream or lake to determine whether a given stage of water is above or below ordinary high-water mark."

For purposes of determining the extent of control of the public trust "it is immaterial what the character of the stream of water is. It may be deep or shallow, clear or covered with aquatic vegetation." *Id.*

⁵ "Uplands—Land bordering bodies of water but above the high water mark." *The Real Estate Dictionary* (3d ed. 1984).

The trial court used the incorrect legal standard when it acknowledged the connection of the lake to the property by water flowing to and from the site but decided the land was not Lake Superior lakebed because of the state's "failure to prove that the project land is navigable."

[3, 4]

The question of whether the facts in a particular case fulfill a particular legal standard is a question of law which this court will review. *Hennekens v. River Falls Pol. & Fire Comm.*, 124 Wis. 2d 413, 424, 369 N.W.2d 670 (1985). Where a trial court bases its decision on a mistaken view of the law, its decision constitutes an abuse of discretion as a matter of law. *Schmid v. Olsen*, 111 Wis. 2d 228, 237, 330 N.W.2d 547 (1983).

[5]

An area need not be navigable to be lakebed. If the land is part of the navigable lake, then the fact that the specific area cannot be navigated is irrelevant to the state's claim. Lakebed may be heavily vegetated by plants rising far above the water. The court of appeals stated in *Houslet v. Natural Resources Department*, 110 Wis. 2d 280, 287, 329 N.W.2d 219 (Ct. App. 1982):

"[T]he public interest in and title to the navigable waters in this state attaches to more than the open and perpetually navigable waters contained in lakes, rivers and streams. It extends to areas covered with aquatic vegetation within the ordinary high water mark of the body of water in question."

Public ownership of the bed applies whether the water is deep or shallow. *Diedrich v. The N. W. U. R'y. Co.*, 42 Wis. 248, 266 (1877) stated:

"And the reason of the rule [that the public trust of the lakebed or river bottom cannot be part of private lands] applies equally, whether the water immediately next the shore be shoal or deep. For the fee is equally in the public; even the shoal water next the shore may aid the public use, and may deepen or be deepened, so as to become practically capable of navigation."

The developers' reliance on *DeGayner & Co. v. DNR*, 70 Wis. 2d 936, 236 N.W.2d 217 (1975) is misplaced. *DeGayner* answered the question: "What is a 'navigable stream'?" Lake Superior is admittedly navigable, and therefore *DeGayner* does not assist in analysis. The issue in the current case is where a navigable body of water is identified, what are the boundaries of the public trust associated with the bed of that body of water. Lake Superior is navigable and if the non-navigable site is a part of the lake, then the land below the OHWM is held in trust for the public.

[6]

The rights Wisconsin citizens enjoy with respect to bodies of water held in trust by the state include the enjoyment of natural scenic beauty as well as the purposes of navigation, swimming and hunting. In *Just v. Marinette County*, 56 Wis. 2d 7, 17, 201 N.W.2d 761 (1972) we stated the public has a present right to preserve natural resources such as wetlands because wetlands:

"[S]erve a vital role in nature, are part of the balance of nature and are essential to the purity of the water in our lakes and streams. Swamps and

wetlands are a necessary part of the ecological creation and now, even to the uninitiated, possess their own beauty in nature."

The trial court found the state failed to prove the "height and sufficiency of the hydraulic connection." It appears from the record the trial court was referring to the supposed absence of evidence relating to the height of the culverts connecting the site with Lake Superior, not the absence of evidence as to the pre-existing conditions of the naturally occurring inlet where the marina was built. It is obvious that hydraulic connection has no meaning other than being connected by water. There is a great deal of evidence in the record that historically shows an open-water inlet crossing under the Old Fort Road and extending east into a wetland on the inland side of the road. The court of appeals did not err in finding that the site is part of a basin naturally connected to Lake Superior.

Developers argue that they submitted proof of a chain of title to the site demonstrating that the site was never lakebed. The original federal patent to the site was dated April, 1856, approximately eight years after Wisconsin became a state. As of the date of statehood, Wisconsin obtained absolute title to the beds of navigable waters like Lake Superior which could not be defeated by a subsequent federal patent relating to the lands. *State Land Board v. Corvallis Sand & Gravel Co.*, 429 U.S. 363 (1977). See also *Angelo v. Railroad Commission*, 194 Wis. 543, 550, 217 N.W. 570 (1928).

The trial court did not find nor is there any evidence to support the fact that the project site is entirely dry land above the OHWM of Lake Superior. There is no evidence nor finding that would support a

legal conclusion that the doctrine of reliction has any application to this case.⁶

The developers also argue they are entitled to the land under the operation of accretion. That doctrine, like reliction, relates only to land above the OHWM. Accretion refers to dry lands which no longer form part of the bed of a water body. *De Simone v. Kramer*, 77 Wis. 2d 188, 197, 252 N.W.2d 653 (1977): "Accretion has been defined as 'the increase in land caused by the gradual deposit by water of materials on the shores, which deposit replaces the water at this location with dry land.'" The doctrine of accretion is not relevant since the state claims only lands lying below the OHWM.

The trial court made an error of law when it assumed that the site itself had to be navigable in fact in order to be considered Lake Superior lakebed. The state holds in public trust "[t]he title to the beds of all lakes ... up to the line of ordinary high-water mark" *Illinois Steel*, 109 Wis. 418, 425. The state regulates navigable waters through sec. 30.12(1), Stats. The question is whether some or all of the project site is within Lake Superior's OHWM, not whether it is navigable.

The trial court failed to make OHWM findings even though the state presented evidence establishing Lake Superior's and the site's OHWM. The DNR's area water management specialist, Richard Knitter, testified that he determined the lake's OHWM approximately one-half mile from the site at a protected

⁶Black's Law Dictionary (5th ed. 1979) defines "reliction" as: "An increase of the land by the permanent withdrawal or retrocession of the sea or a river. Process of gradual exposure of land by permanent recession of body of water."

location with a clear erosion line that was free from excessive wave action. Knitter then determined that this site's elevation was 602 feet I.G.L.D.⁷ He transferred the elevation of the OHWM site to a number of points at the project site and concluded that approximately half of the site was below Lake Superior's OHWM.⁸ The developers' surveyor did not determine the OHWM of the site or Lake Superior.

In *State v. McFarren*, 62 Wis. 2d 492, 498, 215 N.W.2d 459 (1974), we stated:

"The term 'ordinary high-water mark' was most recently defined in *State v. McDonald Lumber Co.* [(1962), 18 Wis. 2d 173, 176, 118 N.W.2d 152, quoting from *Diana Shooting Club v. Husting* (1914), 156 Wis. 261, 272, 145 N.W. 816]:

"By ordinary high-water mark is meant the point on the bank or shore up to which the presence and action of the water is so continuous as to leave a distinct mark either by erosion, destruction of terrestrial vegetation, or other easily recognized characteristic. *Lawrence v. American W. P. Co.*, 144 Wis. 556, 562, 128 N.W. 440. And where the bank or shore at any particular place is of such a character that it is impossible or difficult to ascertain where the point of ordinary high-water mark is, recourse may be had to other places on the bank or shore of the same stream or lake to

⁷I.G.L.D. is an abbreviation for International Great Lakes Datum, a reference system used for expressing elevations in the Great Lakes area.

⁸The ordinary high water mark transfer rule was developed to promote certainty and ascertain property rights in riparian lands. An ABA publication strongly recommends its ascertainment prior to construction. *Real Property, Probate and Trust Journal*, Vol. 18, No. 3 (Fall 1983).

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determine whether a given stage of water is above or below ordinary high-water mark."

"In *McDonald* it was stated that the state's title to the lake bed runs to the ordinary high-water mark." (Footnotes omitted.)

The trial court did not make a finding whether the site was connected by water to Lake Superior; however, the trial judge did make this observation, "sometimes water goes into the culvert ... from the marina onto the project property and sometimes it flows out from the project property"

Knitter analyzed several aerial photographs of the site as it existed in 1939 and 1950, the government survey maps, the site's present configuration, and stereo photographs offering a three-dimensional view of the site indicating elevation and from these sources he concluded that the project site was originally part of the basin, which was enlarged to become the present marina. The developers' expert did not directly refute this evidence.

When the physical facts are unquestionably established, testimony to the contrary must give way. *Pappas v. Jack O. A. Nelsen Agency, Inc.*, 81 Wis. 2d 363, 369, 260 N.W.2d 721, 724 (1978). In *Thiel v. Damrau*, 268 Wis. 76, 85, 66 N.W.2d 747, 752 (1954), the court stated: "Positive uncontradicted testimony as to the existence of some fact, or the happening of some event, cannot be disregarded by a court or jury in the absence of something in the case which discredits the same or renders it against the reasonable probabilities."

[7]

The positive and uncontradicted testimony of Knitter that the OHWM of Lake Superior is 602

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Supreme Court

I.G.L.D. and that the project site was and is hydraulically connected to and is in fact a part of Lake Superior is not discredited nor against reasonable probability. The erection of the artificial barrier, the Old Fort Road, with culverts between the site and the marina does not remove the site as part of Lake Superior. As long as lake water would naturally flow to and from the site in the absence of an artificial barrier, it is a part of Lake Superior. The state therefore properly determined the lake's OHWM at "other places on the ... shore of the same ... lake" and transferred that finding to the project site. *Diana Shooting Club*, 156 Wis. at 272.

The state claims about half of the site is below 602 feet I.G.L.D. The developers' surveyor, while originally agreeing, later claimed that all of the site was above the 602 feet OHWM. The trial court did not resolve conflicts as to the elevations on the site.

We affirm the court of appeals and therefore remand the case to the trial court for findings as to the various elevations of the project site. Any part of the site at or below 602 feet I.G.L.D. is within the OHWM of Lake Superior and is therefore protected lakebed upon which building is prohibited. Any part of the site above 602 feet is still within the floodplain of Lake Superior and falls within the county's jurisdiction.

The board did not and could not properly grant the developers a floodplain variance as to any part of the site below the OHWM of Lake Superior. Ashland county adopted a floodplain ordinance pursuant to secs. 59.97 and 87.30, Stats. The board may grant a variance only if the grant "will not be contrary to the public interest" and "owing to special conditions, a literal enforcement ... would result in unnecessary hardship." Ashland County Flood Plain Zoning Ord-

nance, sec. 7.34 (April 21, 1981); sec. NR 116.21(4), Wis. Adm. Code (1986). Also, a variance "[s]hall be consistent with the spirit and intent of this ... ordinance" and shall not be granted "solely on the basis of economic gain or loss" nor for "a self-created hardship." Ashland County Flood Plain Zoning Ordinance, sec. 7.34(a), (g) and (h) (1981); Wis. Adm. Code NR 116.21(4) (1986).

The board neglected making any findings as to whether the proposed project will be contrary to the public interest, whether the site has a special condition, and whether this special condition would result in unnecessary hardship. The board also failed to find whether the variance would be granted solely for an economic gain or loss and whether there is a self-created hardship.

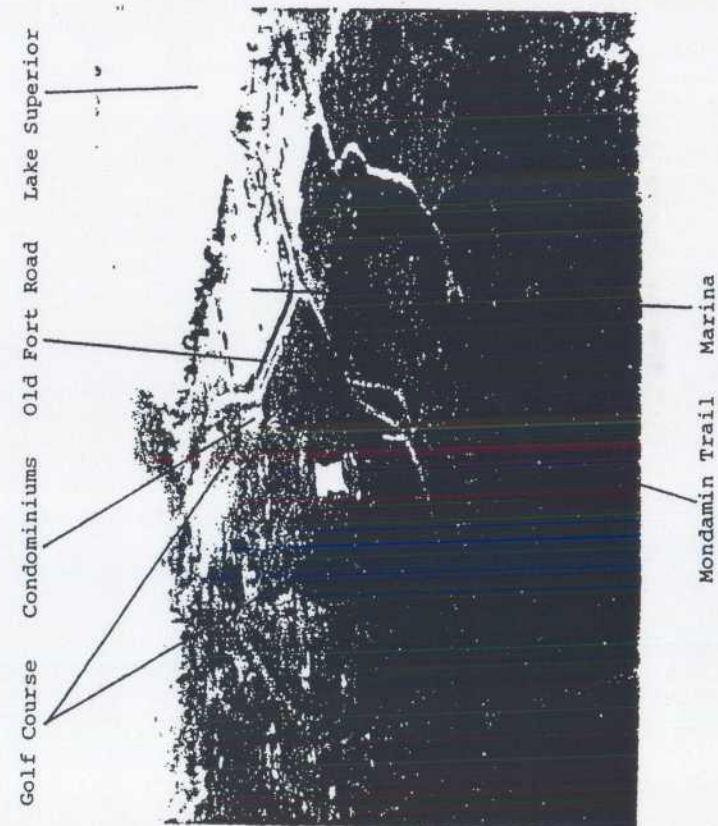
We remand the case to the circuit court with directions to remand the matter to the board of adjustment for findings concerning those portions of the site higher than 602 feet, the OHWM of Lake Superior. The board must make appropriate findings supporting its conclusion so a meaningful judicial review is possible. See *State ex rel. Ruthenberg v. Annuity & Pension Bd.*, 89 Wis. 2d 463, 478, 278 N.W.2d 835, 842 (1979). The board is required to include findings on public interest, special conditions and unnecessary hardships as well as any of the relevant eight factors set out in sec. 7.34 of the Ashland County Flood Plain Zoning Ordinance. To be considered also is the Ashland county ordinance requirement for a 75 foot set-back from the lakebed as found by the trial court.

The decision of the court of appeals is affirmed and the case is remanded to the trial court for factfinding consistent with this opinion for findings as

to that portion of the site found by the trial court to be above 602 feet I.G.L.D.

By the Court.—The decision of the court of appeals is affirmed.

Exhibit 1



Diana Shooting Club v. Kohl, 156 Wis. 257.

less we are absolutely required by the words of the statute to do so. Then the statute would be of doubtful validity. *Durkee v. Janesville*, 28 Wis. 464. It is one thing to limit the costs in actions for trespass committed in hunting on wild lands, that is, lands unoccupied and uninhabited at all times and in a state of nature and not devoted to any particular use, and quite another to limit the costs for trespass by hunting on lands devoted by the owner or lessee to the breeding and hunting of wild fowl, while allowing costs to all other persons for trespasses affecting the use to which their property is devoted. The lands in question do not belong in the class of wild lands or lands in a state of nature, but are lands devoted to a particular purpose of the owner which is interrupted and specially injured by that kind of trespass here complained of. The costs added to nominal damages may suffice for the protection of plaintiff's property; nominal damages with only as much costs as damages would not. So the justice should have taxed full costs against the defendant. If the plaintiff had appealed from the justice's judgment merely on the record as there made and there was no new trial in the circuit court, plaintiff could have had the error of the justice corrected and could have collected the costs of both courts. But there was a new trial upon appeal, and in such case the plaintiff, not having obtained a more favorable judgment of damages than that from which it appealed, was not entitled to costs, but the defendant was so entitled. Sec. 2925, Stats. We therefore hold that the judgment of the justice and that of the circuit court were both erroneous in the matter of costs, but that the error has not prejudiced the appellant because its title is vindicated and it pays less costs than it would had the proper judgment been entered in circuit court.

By the Court.—Judgment affirmed.

BARNES, J., took no part.

Diana Shooting Club v. Husting, 156 Wis. 261.

DIANA SHOOTING CLUB. Appellant, vs. HUSTING, Respondent.

February 6—February 24, 1914.

*Navigable waters: Rights of the public and of riparian owners:
Hunting: Extent of right: High-water mark.*

1. Navigable waters in this state are public waters, and the policy which, in the ordinance of 1787, in the enabling act of 1846, and in the state constitution, reserved to the people the full and free use of public waters should not be limited or curtailed by narrow construction but should be interpreted in the broad and beneficent spirit that gave rise to it.
2. Riparian owners on navigable streams in this state have only a qualified title to the beds of such streams, which title is entirely subordinated to, and not inconsistent with, the right of the state to secure and preserve to the people the full enjoyment of navigation and the rights incident thereto.
3. The right of the public to hunt on the navigable streams of this state is, like the right to fish in such streams, an incident of the right of navigation.
4. Hunting on navigable waters is lawful when it is confined strictly to such waters while they are in a navigable stage, and between the boundaries of ordinary high-water marks; and when so confined it is immaterial what the character of the stream or water is, whether deep or shallow, clear or covered with aquatic vegetation.
5. By ordinary high-water mark is meant the point on the bank or shore up to which the presence and action of the water is so continuous as to leave a distinct mark either by erosion, destruction of terrestrial vegetation, or other easily recognized characteristic.
6. Where the bank or shore at any particular place is of such a character that it is impossible or difficult to ascertain where the point of ordinary high-water mark is, recourse may be had to other places on the bank or shore of the same stream or lake to determine whether a given stage of water is above or below ordinary high-water mark.
- [7. Whether the public has a right to hunt between ordinary high-water marks on a navigable stream which, owing to a low stage of water, is unnavigable, or on land between such marks which has become dry or exposed, not decided.]

Diana Shooting Club v. Husting, 156 Wis. 261.

APPEAL from a judgment of the circuit court for Dodge county: MARTIN L. LUECK, Circuit Judge. *Affirmed.*

Action of trespass. The complaint alleges the incorporation of the plaintiff; that on the 24th day of September, 1911, it was lawfully in possession of section 19 in the town of Williamstown, Dodge county, Wisconsin, and was the owner of the exclusive right and title to the hunting and shooting privileges upon said section. It then charges that the defendant unlawfully broke and entered upon the same, trod down and injured the grass, rushes, wild rice, and herbage growing thereon, and disturbed the plaintiff in the use and occupation of its land and interfered with its exclusive right to hunt and shoot thereon, to its damage in the sum of \$50. The answer denied that the defendant broke or entered upon the premises of plaintiff or hunted upon its land or in any way disturbed its possession or right of enjoyment thereto, and alleged that defendant hunted only upon the public navigable waters of the state; that he was a resident thereof and in possession of a license duly issued which entitled him to hunt where he did.

The trial court found these facts: The defendant at the time of the alleged trespass was a resident and citizen of this state, in possession of a valid hunting license. On September 24, 1911, without trespassing upon the lands of the plaintiff, he entered his hunting boat floating upon the waters of Rock river and with the aid of pole and paddle propelled it down the river to the place of the alleged trespass, and there, for the purpose of shooting wild ducks flying over the place, he pushed it into a growth of vegetation known as "flag" which grew from the bottom of the water to a height of from four to five feet above the surface. The place of the alleged trespass was within the area of what is known as Malzahn's Bay, which is a widening of the river and is about one-half mile wide and about five eighths of a mile long. The bay has well defined shores or banks and is surrounded

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on all sides, with the exception of the channels through which the water passes, with what are called hard bog, which may be traveled afoot without a person walking thereon sinking in. During the months of March to June, inclusive, in each year, at time of ordinary high water, the water over this entire area, from hard bog or shore, is from one to two feet in depth. During the summer months and fall this depth gradually decreases to from eight to twelve inches. In times of low water, for a distance of several rods out from the hard bog or shore, the water recedes from the surface altogether, leaving a rim of mud exposed. Such exposed rim, called soft or mud bog, at such times is unnavigable by boat and cannot be traveled upon by foot without a person so attempting to walk thereon sinking to his knees or hips. During the spring and summer months, up to and including the month of June, each year, the waters of Malzahn's Bay are, and have for thirty-five years at least been, navigable in fact from hard bog to hard bog over its entire area, and have during all such time in each year been navigated generally by the public with rowboats. During the period ending in June of each year the place of the alleged trespass is covered with water in common with the remaining area of Malzahn's Bay, and during all of the time within the last thirty-five years has been navigable and navigated the same as, and as a part of, said Malzahn's Bay, and during such period said place has not been distinguishable in appearance from any other part of the bay. After the month of June in each year, vegetation, consisting of wild rice, bulrushes, water lilies, and flag, take root below the surface of the water in the soft muck of the bottom and grow above the surface to a height of from four to five feet, forming blinds or cover in which hunters conceal themselves from view of the ducks flying over. The flag extended west and north from where the trespass is alleged to have occurred for a distance of about ten to twelve rods to what is known as the old river bed, which is between two to

three rods in width, and during the periods of each year ending in June is navigable in fact and has always been in fact navigated with the remaining area of Malzahn's Bay. Later in the year, in times of low water, the water recedes, sometimes leaving the bottom of the old river bed exposed and sometimes leaving it with a shallow covering of water. At such times the river bed is dotted with sparsely growing aquatic vegetation, such as rushes, rice, and flag. Up to and including the month of June each year the place of the alleged trespass is separated from the hard bog or shore by such strip of water. To the west and north of said old river bed again occurs a growth of flag and rushes which continues to the west and north of the hard bog or shore of the bay. At the time and place in question the water below the boat of the defendant was about twelve inches deep, and his boat was floating upon the water. The water to the west and north of his boat gradually decreased in depth as it neared the hard bog or shore, finally ending a number of rods from the hard bog or shore, leaving the bottom of the bay exposed. In all other directions the place of the alleged trespass was surrounded by open water free from vegetation to the line of vegetation upon the opposite shore of the bay, and all of said open water, including that part of the bay covered by aquatic vegetation until the so-called mud or soft bog was reached, was navigable in fact at all periods of the year, except when frozen over. At about the place in question the waters of the bay began to narrow down to what is known as Skirmish Line, which lies upon the usual route of travel from points north and east to points west and south, and the place of the alleged trespass was during the period ending in June of each year within the route of such travel. Rock river, including Malzahn's Bay, has been in fact, for more than thirty-five years prior to the 24th of September, 1911, a natural, navigable river and body of water and was in fact navigated by the public generally by skiffs and rowboats during all of said time.

At the time of the alleged trespass the plaintiff had a valid subsisting lease of certain land abutting on Rock river, and the bed of the river, including Malzahn's Bay at the point of the alleged trespass, was embraced within the descriptions of premises covered by said lease, which in its terms purported to give to the plaintiff exclusive hunting privileges upon the premises owned by the lessors and covered by the lease.

As conclusions of law the court found (1) that plaintiff at the time in question had no vested right to use the place of the alleged trespass to the exclusion of the public; (2) that the defendant was lawfully exercising the right to hunt at said place and did not trespass upon the lands of the plaintiff and did not in any manner interfere with plaintiff's rights; and (3) that judgment should be entered dismissing the complaint upon the merits.

From a judgment entered accordingly the plaintiff appealed.

For the appellant there was a brief by *Doe & Ballhorn*, and oral argument by *J. B. Doe*. They contended, *inter alia*, that the right of navigation or to use a river as a highway does not carry with it the right to conceal one's self in the vegetation belonging to and growing on the property of another, for the purpose of shooting wild ducks, and the doing so and actually shooting such ducks constitutes trespass upon the rights of the owner of the soil under the water and of the vegetation growing through and above such water. Defendant's right upon the navigable portions of Rock river consists of nothing more than a right to pass to and fro over the open waters of such portions of said river, and he had no right to leave the open part of the stream or to push into the vegetation belonging to and in the exclusive possession of the plaintiff, or to stop or hide on plaintiff's premises for the purpose of hunting or to shoot ducks passing over plaintiff's premises. The exclusive right to do such acts was vested in the plaintiff by its lease; that is, in the owner of the soil. They cited *Bristow v. Clormican*, T. R. 2 App C35 641. *Gould Waters*

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(3d ed.) § 81; 2 Farnham, Waters & Water Rights, sec. 398; *State v. Roberts*, 59 N. H. 256; *Percy S. Club v. Astle*, 145 Fed. 60; *Duncan v. Sylvester*, 24 Me. 482; *Schulte v. Warren*, 218 Ill. 108, 75 N. E. 783; *Willow River Club v. Wade*, 100 Wis. 86, 76 N. W. 273; *Diana S. Club v. Lamoreux*, 114 Wis. 44, 89 N. W. 880; *Whittaker v. Stangvick*, 100 Minn. 386, 111 N. W. 295; *L. Realty Co. v. Johnson*, 92 Minn. 363, 100 N. W. 94, 66 L. R. A. 439; *Sterling v. Jackson*, 69 Mich. 488, 37 N. W. 845.

For the respondent there was a brief by *Husting & Brother*, and oral argument by *Paul O. Husting*. To the point that in this state the riparian owner of land abutting on a navigable stream takes and holds his title to the bed of such stream between the lines of ordinary high-water mark, in trust for and subject to the rights of the public for the purpose of navigation, hunting, fishing, and other like public purposes, they cited *Willow River Club v. Wade*, 100 Wis. 86, 76 N. W. 273; *Ne-pee-nauk Club v. Wilson*, 96 Wis. 290, 71 N. W. 661; *Prieve v. Wis. S. L. & I. Co.* 103 Wis. 537, 79 N. W. 780; *Pewaukee v. Savoy*, 103 Wis. 271, 79 N. W. 436; *Diana S. Club v. Lamoreux*, 114 Wis. 44, 89 N. W. 880; *Ill. S. Co. v. Bilot*, 109 Wis. 418, 84 N. W. 855, 85 N. W. 402; *Franzini v. Layland*, 120 Wis. 72, 81, 97 N. W. 499; *In re Horicon D. Dist.* 136 Wis. 227, 234-237, 116 N. W. 12. As to how the high-water mark is to be determined, they cited *Carpenter v. Hennepin Co.* 56 Minn. 513, 58 N. W. 295; *Welch v. Browning*, 115 Iowa, 690, 87 N. W. 430; 15 Am. & Eng. Ency. of Law (2d ed.) 342; *Howard v. Ingersoll*, 13 How. 381, 427, 428.

VINJE, J. The ordinance of 1787 establishing the government of the Northwest territory of which Wisconsin formed a part, provided that "The navigable waters leading into the Mississippi and St. Lawrence, and the carrying places between the same, shall be common highways, and for-

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ever free, as well to the inhabitants of the said territory, as to the citizens of the United States, and those of any other states that may be admitted into the confederacy, without any tax, impost, or duty therefor." The act of April 20, 1836, establishing the territorial government of Wisconsin, provided in sec. 12 thereof that the inhabitants of the territory should be subject to all the conditions and restrictions and prohibitions contained in the ordinance of 1787. The act of August 6, 1846, enabling the people of Wisconsin territory to form a state, declared that "the said state of Wisconsin shall have concurrent jurisdiction on the Mississippi and all other rivers and waters bordering on the said state of Wisconsin, so far as the same shall form a common boundary to said state and any other state or states now or hereafter to be formed or bounded by the same; and said river and waters, and the navigable waters leading into the same, shall be common highways and forever free, as well to the inhabitants of said state as to all other citizens of the United States, without any tax, duty, impost or toll therefor." Sec. 1, art. IX, of our constitution provides that "the river Mississippi and the navigable waters leading into the Mississippi and St. Lawrence, and the carrying places between the same, shall be common highways and forever free, as well to the inhabitants of the state as to the citizens of the United States, without any tax, impost or duty therefor."

It will thus be seen that ever since the organization of the Northwest territory in 1787 to the time of the adoption of our constitution the right to the free use of the navigable waters of the state has been jealously reserved not only to citizens of the territory and state but to all citizens of the United States alike. All that part of Rock river as far north as the northern boundary of Dodge county is by sec. 1607, Stats. 1913, declared navigable, and the court found it, as well as the *locus in quo*, to be so in fact, at the time the alleged trespass was committed. The case therefore presents the ques-

ous illegal acts upon the state's property in the lake bed of the waters of Green bay. The first cause of action of the complaint alleges that the defendant excavated from the lake bed of Green bay without the authorization of the public service commission in violation of sec. 31.02 (7), Stats. 1957. The second cause of action alleges that the defendant placed fill upon the lake bed of Green bay in violation of sec. 31.23, Stats. 1957. The third cause of action alleges that such fill is a nuisance and subject to abatement under sec. 31.25, Stats. 1957. The fourth cause of action alleges a continuing and unauthorized trespass upon the lake bed of Green bay. The prayer for relief seeks civil forfeiture penalties for the excavation and filling, for an injunction against the continuance thereof, and for abatement of the nuisance.

The trial court found the defendant guilty of excavating and filling part of the lake bed in question without first obtaining permission from the public service commission. For this violation civil forfeitures were assessed against the defendant. The court enjoined the defendant from filling farther out into the water but refused to order abatement of the alleged nuisance under the third cause of action and also refused to grant an injunction against continuance of the unauthorized excavation and trespass as set forth in the fourth cause of action.

The property in question is located at the shoreline of Green bay just east of the mouth of the Fox river. By a warranty deed dated September 21, 1936, the city obtained title to a parcel of land bounded by such shoreline.

During 1935 and 1936, the United States army corps of engineers dredged the channel of the Fox river and Green bay and piled some of the dredged material in the water along this shore. These dredge banks, or mud dumps as they were called, stuck out of the water and appeared as islands when they were first put in.

On June 23, 1952, the city of Green Bay deeded part of this property to the respondent McDonald Lumber Company. The property acquired by the respondent was 450 feet wide from north to south and approximately 3,150 feet long from east to west. The respondent's property is bounded on the north by property retained by the city of Green Bay, on the south by Diener drive, on the east by Sauk street and on the west by the harbor line of the Fox river.

This conveyance by the city to the respondent referred to above grants riparian rights on the Fox river to the grantee respondent, but reserves to the grantor municipality riparian rights to the waters of Green bay to the north.

On April 15, 1957, the McDonald Lumber Company, Inc., applied to the army corps of engineers for a permit to construct a dock and slip east of the mouth of the Fox river. This slip was to be located north of and adjacent to the western portion of the property.

The respondent also contacted the Wisconsin public service commission regarding a state permit for this project. Although the department of the army issued a permit to the respondent, the state has never done so.

The state has appealed from the judgment insofar as it denies relief on the state's third and fourth causes of action. The respondent has filed a motion to review that portion of the judgment which fixed a forfeiture for the respondent's excavating and placing fill upon the lake bed of Green bay.

For the appellant the cause was argued by *Albert Harri-man* and *Roy G. Tulane*, assistant attorneys general, with whom on the briefs was *John W. Reynolds*, attorney general.

For the respondent there was a brief by *Evrard, Evrard, Duffy, Holman & Faulds* of Green Bay, and oral argument by *James Faulds*, *Raymond E. Evrard*, and *Joseph P. Holman*.

GORDON, J. The appellant urges that in connection with its third and fourth causes of action the trial court erred in failing to enjoin the respondent's trespass upon the state's property and in failing to abate the continuation of a nuisance. The success of the state's contentions is contingent upon its ability to establish with accuracy an old shoreline upon what is presently upland.

We are asked by the appellant to determine that a specific portion of the property occupied by the respondent is located upon the lake bed belonging to the state. The state's title to the lake bed runs to a line which is called the "ordinary high-water mark." *C. Beck Co. v. Milwaukee* (1909), 139 Wis. 340, 351, 120 N. W. 293. In seeking to prove its entitlement to injunctive relief, the state has undertaken to establish the location of the ordinary high-water mark. The trial court concluded that the location of such ordinary high-water mark was not proved by the state, and we are unable to reject such conclusion as being against the weight of the evidence.

The term "ordinary high-water mark" has been defined in *Diana Shooting Club v. Husting* (1914), 156 Wis. 261, 272, 145 N. W. 816, as follows:

"By ordinary high-water mark is meant the point on the bank or shore up to which the presence and action of the water is so continuous as to leave a distinct mark either by erosion, destruction of terrestrial vegetation, or other easily recognized characteristic. *Lawrence v. American W. P. Co.* 144 Wis. 556, 562, 128 N. W. 440. And where the bank or shore at any particular place is of such a character that it is impossible or difficult to ascertain where the point of ordinary high-water mark is, recourse may be had to other places on the bank or shore of the same stream or lake to determine whether a given stage of water is above or below ordinary high-water mark."

In lieu of a natural high-water mark, the appellant offered proof as to the average of the high-water level of the

Great Lakes as determined by the United States army corps of engineers for the period 1860-1959. Using that standard, the state fixes the high-water mark at 581 feet above sea level. The state urges that the 580-foot contour line reflected on plaintiff's Exhibit 51 can be used to show that the respondent is trespassing and committing a nuisance upon the state's land.

The trial judge, in his decision, stated the following:

"The third and fourth causes of action relate to nuisance and abatement thereof. Before a court can grant a remedy with respect to either in this action it is imperative that the area which constitutes the nuisance and its abatement must be established with reasonable certainty. Unless so established a judgment cannot be declared and equally important cannot be enforced by contempt or otherwise. . . . The burden of proof rests upon the plaintiff and it has failed to meet the burden with respect to the area within which fill constitutes a nuisance and the area within which the court by way of abatement could require the fill to be removed. . . . The court cannot indulge in speculation and conjecture as to what part, if any, of fill or warehouse footings constitutes a nuisance and what does not or what may be abated and what may not."

We conclude that the trial court was correct in its view as to the burden of proof. Further, the state has failed to persuade us that the court erred in its above-quoted evaluations of the evidence. The trier of fact was not obliged to adopt the 581-foot corps-of-engineers' figure, the 580-foot contour line, or even the respondent's own sketch of the area as reflected on plaintiff's Exhibit 20.

In view of our conclusion that the trial court did not err in refusing to adopt the state's proof as to the ordinary high-water mark, we do not reach the other issues raised as to the law of accretion.

The trial court was satisfied that the McDonald Lumber Company had illegally deposited fill along the westerly

and demanding damages for an injury to a highway claimed to have been caused by reason of the use of such flush-boards.

The defendant owns a paper mill on the west bank of the Fox river at De Pere that requires about 1,800 horse power for its operation. The plaintiff town has for more than forty years maintained, and now maintains, a highway by user, which, at about five and two-thirds miles above defendant's dam, in places borders directly upon the bank of the river. In such places the surface of the ground is but a little above the level of the water; but the shore is marked by a perpendicular bank below which is a beach, exposed at low water and covered up to the bank at high water. About twenty-two years ago, owing to the gradual erosion of the bank by the water, the highway in some places was moved back from the bank; and four years ago it was again moved back still further.

As early as 1837 a dam was built across the river at or about the location of the present dam. This dam was rebuilt in 1849, and prior to 1872 the United States government purchased the dam and assumed its control and management. Between 1872 and 1874 it built a new dam a few feet south of the old one and practically of the same height. Owing to the fact that it was tighter, it held the water back at a little higher level than the old one did. The government permits the water to flow over the crest of the dam to a height of two feet before it opens the flood-gates, and then it does so in order not to subject the dam to too great a pressure. It does not permit the water to be drawn off for power purposes lower than the crest of the dam. The east end of the defendant's dam connects with the government dam, and since it began to operate its mill in 1892 it has in times of low water maintained flush-boards upon its own dam and later upon the government dam under a license from the United States relieving the latter from any liability on account of the use of such flush-boards. When the water is eighteen inches or

more above the crest of the dam, flush-boards are not permitted to be used.

Since 1874 there has existed a number of mills at Neenah, Appleton, Kaukauna, and other points on the river, run by water power. These mills shut down from Saturday evening until Monday morning, and when so shut down they hold the water back to such an extent that during Mondays and part of Tuesdays it is so low at De Pere that defendant cannot draw from the reservoir sufficient to run its mill without drawing the water below the crest of the dam. To overcome this condition as far as possible, it has, during all the time that it has run its mill, when the flow of the water was so small as to require it, used flush-boards on the dam, some eight and some twelve inches high, the effect of which has been to raise the average water level of the reservoir about ten inches above the level maintained prior to 1892, during low stages of water.

There has been considerable fluctuation in the flow of the river, and the water was higher on the crest of the dam more of the time annually when there were no flush-boards on it than during the time when flush-boards were used. At no time has the use of flush-boards caused the water to overflow the river bank where the highway borders on it. When the water is at the crest of the dam it does not cover the shore or beach nor reach the bank along the highway. When the water is eighteen inches above the crest of the dam it reaches the bank on which the highway borders; but even when it is two feet high on the crest of the dam it does not overflow the bank.

The bank on which the highway abuts has not been washed away by a swift current, but by the joint action of ice and water. It is claimed that the river freezes when the water is at a high stage. When the water falls, the ice cracks and parts not far from the shore. The space thus opened fills with water and freezes again, thus extending the width of the ice. When the water again rises, the ice is forced against the

tion whether the right to hunt on navigable waters of the state is reserved to the residents thereof where the title to the land covered by such waters is in private parties. At common law the rights of hunting and of fishing were held to be incident to the right of navigation. In England, however, only waters on which the tide ebbed and flowed were held navigable. Such limitation upon navigable waters has never obtained in the United States. Navigability in fact for products of the forest, field, or commerce for regularly recurrent annual periods has, in our state, been held sufficient to constitute a stream navigable. *Olson v. Merrill*, 42 Wis. 203; *Weatherby v. Meiklejohn*, 56 Wis. 73, 76, 13 N. W. 697; *A. C. Conn Co. v. Little Suamico L. M. Co.* 74 Wis. 652, 655, 43 N. W. 660; *Falls Mfg. Co. v. Oconto River Imp. Co.* 87 Wis. 134, 58 N. W. 257; *Bloomer v. Bloomer*, 128 Wis. 297, 311, 107 N. W. 974.

In some of the states embraced within the Northwest territory the title to the bed of navigable streams remained in the state. In Wisconsin it is held to be in the riparian owners. So far as the right of navigation, and the rights incident thereto, are concerned, it is entirely immaterial who holds the title, the state or the riparian owners. Such title is equally subject to the rights mentioned. It is beyond the power of the state to alienate it freed from such rights. *Priewe v. Wis. S. L. & I. Co.* 103 Wis. 537, 550, 79 N. W. 780, and cases cited; *People v. New York & S. I. F. Co.* 68 N. Y. 71; 1 Farnham, Waters & Water Rights, sec. 36a. Speaking of this difference in the law of the several states as to who owns the title to the bed of navigable streams, the supreme court of the United States in *Hardin v. Jordan*, 140 U. S. 371, 383, 11 Sup. Ct. 808, 838, says:

"In the one case, the state, by its general law, does not allow the grant to inure to the individual farther than to the water's edge, reserving to itself the ownership and control of the river bed; in the other cases, the states allow the full common-law effect of the grant to inure to the grantee, reserving

to themselves only those rights of eminent domain over the waters and the land covered thereby which are inseparable from sovereignty."

It would no doubt have been more logical to hold, as English courts do, that private ownership ends where navigability begins, but there is nothing inconsistent in the doctrine of private ownership of beds of navigable streams subject to all the burdens of navigation and the incidents thereof. As long as the state secures to the people all the rights they would be entitled to if it owned the beds of navigable rivers, it fulfils the trust imposed upon it by the organic law which declares that all navigable waters shall be forever free. As was pointed out in *Willow River Club v. Wade*, 100 Wis. 86, 76 N. W. 273, riparian owners on navigable streams have only a qualified title to the beds thereof, which title is entirely subordinated to, and not inconsistent with, the rights of the state to secure and preserve to the people the full enjoyment of navigation and the rights incident thereto.

The same case, also clearly establishes the right of the public to fish in all the navigable waters of the state, holding as it does that the right of navigation carries with it the right of fishing, which is incident to the right to navigate. The same process of reasoning applies to the right to hunt on navigable waters as an incident to the right of navigation. No difference in principle is perceived. Indeed, if there is any force at all in assuming that there is no relation between the title to the bed of a navigable stream and the fish in the waters above it, there would seem to be less relation between game and the title to such bed. However, neither the right to fish nor to hunt need be grounded on the absence or presence of such a relation. It is perfectly logical and consistent to extend to our navigable waters such rights as were by the common law of England extended to waters declared navigable by it, even though we enlarge the field of navigability. By sec. 13 of art. XIV of the constitution the common law

of the territory not inconsistent with the constitution was expressly declared to continue to be a part of the law of the state until changed or suspended by legislative enactment.

The extent of the right of a state to regulate and control navigable waters and the soil beneath them, and to declare what waters are navigable, has not been clearly defined. Speaking upon the subject, the supreme court of the United States, in *Hardin v. Jordan*, 140 U. S. 371, 382, 11 Sup. Ct. 808, 838, says:

"This right of the states to regulate and control the shores of tide waters, and the land under them, is the same as that which is exercised by the Crown in England. In this country the same rule has been extended to our great navigable lakes, which are treated as inland seas; and' also, in some of the states, to navigable rivers, as the Mississippi, the Missouri, the Ohio, and, in Pennsylvania, to all the permanent rivers of the state; but it depends on the law of each state to what waters and to what extent this prerogative of the state over the lands under water shall be exercised."

Some states have held that the right of hunting on a navigable stream cannot be exercised by the public. *Winous Point S. Club v. Bodi*, 20 Ohio C. C. 637; *State v. Shannon*, 36 Ohio St. 423. Nor on the navigable waters of a bay, where the ownership of the soil is in private parties. *Sterling v. Jackson*, 69 Mich. 488, 37 N. W. 485—so decided by a divided court of three to two. But if title to the soil under navigable waters is in the state, the right of the public to hunt on such waters exists. *Ainsworth v. Munoskong H. & F. Club*, 153 Mich. 185, 116 N. W. 992, 17 L. R. A. N. S. 1236. And in Illinois it is held the right to hunt and fish is not incident to the right of navigation. *Schulte v. Warren*, 218 Ill. 108, 75 N. E. 783. In Maine and Massachusetts the right of the public to hunt and fish upon inland navigable waters of any size is recognized. *Conant v. Jordan*, 107 Me. 227, 77 Atl. 938, 31 L. R. A. N. S. 434. Our court has never been called upon to determine the right of the public to hunt

on navigable waters the title to the bed of which is in private parties. In *Ne-pee-nauk Club v. Wilson*, 96 Wis. 290, 71 N. W. 661, it was held that riparian owners on a meandered lake had no exclusive right to hunt thereon, and the court, *obiter*, said: "The right of fishing and fowling upon such waters is in the owner of the soil which is under the water," citing *Hardin v. Jordan*, 140 U. S. 371, 11 Sup. Ct. 808, 838, and *Bristow v. Cormican*, L. R. 3 App. Cas. 641. The first case does not really so hold, and the English case was based upon the doctrine that the Crown had no right to non-tidal waters, and that there was no right in the public to fish in such waters.

In *Merwin v. Houghton*, 146 Wis. 398, 131 N. W. 838, the public right of hunting and fishing upon the navigable waters of the state was recognized and asserted, though not the direct subject of adjudication. The question there considered was the right to improve the navigability of a navigable stream, and it was urged that it should not be done because it would take away the right of the public to hunt and fish in certain navigable channels and widenings of the stream which the proposed improvement would destroy. But it was held that the rights of hunting and of fishing must, within reasonable limits, yield to the paramount right to improve the navigation of the stream.

The wisdom of the policy which, in the organic laws of our state, steadfastly and carefully preserved to the people the full and free use of public waters, cannot be questioned. Nor should it be limited or curtailed by narrow constructions. It should be interpreted in the broad and beneficent spirit that gave rise to it in order that the people may fully enjoy the intended benefits. Navigable waters are public waters and as such they should inure to the benefit of the public. They should be free to all for commerce, for travel, for recreation, and also for hunting and fishing, which are now mainly certain forms of recreation. Only by so construing the provi-

Cited
in
Maine
v. 512

Carl J. Dyrbye
168 Starr Wood
Hudson, WI 54016

9/22/05

Dale Simon
FH/4
P.O. Box 7921
Madison, WI 53707-7921

Subject: Comment to Proposed New OHWM for Lake St. Croix, St. Croix River

Dear Dale Simon:

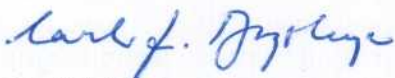
I attended the public information hearing on the above subject held on 8/31/05 at the Hudson Government Center, and as you may recall I commented at the time regarding the meaning of the word "ordinary", as used in Ordinary High Water Mark.

According to Webster's, the word "ordinary" is used to describe a (situation) of a kind to be expected in the normal order of events: Routine, Usual.

However, the data presented by the Wisconsin DNR at the above public information meeting indicated that a pool level of 681.5', as suggested by the Wisconsin DNR for the new OHWM, only has occurred for 21 days, on average, over a period of 55 years, from 1950 – 2005, and for 23 days, on average, over the last 20 years.

Wisconsin DNR's proposal to set a new OHWM for St. Croix River at a pool level of 681.5' hardly can be described as being consistent with Webster's definition of the word "ordinary", as this pool level clearly is neither routine, nor usual, given the above historic data.

Sincerely,



Carl J. Dyrbye

Carl J. Dyrbye
168 Starr Wood
Hudson, WI 54016

9/24/05

Dale Simon
FH/4
P.O. Box 7921
Madison, WI 53707-7921

Subject: Comment to Proposed New OHWM for Lake St. Croix, St. Croix River

Dear Dale Simon:

In continuation of my letter to you of 9/22/05 on the above subject, I would like to add another comment for your consideration:

Given the fact, that the pool level of the St. Croix River, including Lake St. Croix, in reality is controlled and managed by the operator of the first flow control dam downstream on the contiguous waterbody of the upper Mississippi River, any discussion regarding the OHWM of the St. Croix River appears quite irrelevant.

Consequently, the Wisconsin DNR hardly has any basis at all to seek setting a new OHWM based on so-called biological or other scientific evidence, which at best appears to be of questionable nature, for a river which is not free flowing, but having a level which at any time is controlled by others somewhere further downstream.

Sincerely,



Carl J. Dyrbye

09/28/05

D Dale Simon
101 So Webster FH/6
Madison, WI 53707

Dear Mr. Simon,

I am writing to express my opinion on the ordinary high water mark for the St Croix River.

I understand you need to receive this information by Sept 30, 2005.
I hope I am not too late.

As a long time landowner of Lake St Croix property I am writing to protest the differentiation of the old high water mark to the new one.

Why can't it be left like it is and in cooperation with MN?
Wisconsin and Minnesota have shown that when we work together and agree on common rules, we accomplish many important projects. The case in point is no exception. It seems to me we all need to be on the same page.

Many people have purchased land with the reasonable understanding that they would be able to improve their property with their current set back from the old high water mark given to them when they purchased their property.

Please consider leaving the old high water make in place.
Thank you for the opportunity to give my opinion.

Sincerely,
Sally West
319 Lake St
Prescott WI 54021
715-262-4411

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 8-31-05	Do you wish to make an oral statement? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Name JOHN EWING	Telephone Number (please include area code) (715) 386-5722
Street or Route (Mailing Address) 1100 Golden Oaks Dr	
City, State, Zip Code Hudson WI 54016	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☐ No

3. Comments: Urge WDNR to adopt GLS' as the
OHWM

4. Position (Please check one):

☐ As interest may appear

☐ In support

☒ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date	8/31/05	Do you wish to make an oral statement?	maybe	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Name	George Lindeberg	Telephone Number (please include area code)	(715) 386-3405		
Street or Route (Mailing Address)	276 Westgrove Rd				
City, State, Zip Code	Hudson, WI 54016				

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

self

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000?"

☐ Yes ☐ No

3. Comments:

4. Position (Please check one):

☒ As interest may appear

☐ In support

☐ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 8/31/05	Do you wish to make an oral statement? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Name CARL J. DYRBYE	Telephone Number (please include area code) (715) 386 2088
Street or Route (Mailing Address) 168 STARR WOOD	
City, State, Zip Code HUDSON, WI 54016	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000?" ☐ Yes ☐ No

3. Comments:

4. Position (Please check one): ☐ As interest may appear ☐ In support ☒ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date AUG 31, 2008 Do you wish to make an oral statement? ☒ Yes ☐ No

Name BOB ROLLE Telephone Number (please include area code) (715) 425-2700

Street or Route (Mailing Address) 218 SOUTH ILWACO ROAD

City, State, Zip Code RIVER FALLS, WI 54022

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

TOWN OF TROY

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☒ Yes ☐ No

3. Comments:

4. Position (Please check one): ☒ As interest may appear ☐ In support ☐ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 8-31-05	Do you wish to make an oral statement? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Name JAMES (JIM) GREEN	Telephone Number (please include area code) (715) 386-7977
Street or Route (Mailing Address) 170 STARR WOOD	
City, State, Zip Code HUDSON WI 54016	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000?" ☐ Yes ☒ No

3. Comments:

4. Position (Please check one): ☒ As interest may appear ☐ In support ☐ In opposition

REMAIN UNCHANGED OR
CONCURRENT WITH MN H.W.M.
WILL SUBMIT A WRITTEN STATEMENT

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date <u>AUG 31, 2005</u>	Do you wish to make an oral statement? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Name <u>ROGER SANTELMAN</u>	Telephone Number (please include area code) <u>(715) 262-4153</u>
Street or Route (Mailing Address) <u>827 LAKE ST N</u>	
City, State, Zip Code <u>PRESCOTT WI 54021</u>	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

SELF

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☐ No

3. Comments:

4. Position (Please check one):

☐ As interest may appear

☐ In support

☐ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date <u>8/31/85</u>	Do you wish to make an oral statement? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Name <u>JOHN JANSEN</u>	Telephone Number (please include area code) <u>(651) 436-8566</u>
Street or Route (Mailing Address) <u>P.O. BOX 194</u>	
City, State, Zip Code <u>LAKE ST CROIX BEACH, MN 55043</u>	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☐ No

3. Comments:

4. Position (Please check one):

☐ As interest may appear

☐ In support

☐ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 8/31/05 Do you wish to make an oral statement? ☒ Yes ☐ No

Name BILL TILTON Telephone Number (please include area code) (612) 867-7473 = C

Street or Route (Mailing Address) Send mail to 101 East 5th St # 2220 // Home: 298 West Rock Rd
City, State, Zip Code St. Paul MN 55101 // Hudson 54016

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

self

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☐ No

3. Comments:

4. Position (Please check one):

☐ As interest may appear

☐ In support

☐ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 8/31	Do you wish to make an oral statement? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Name Paul Montgomery	Telephone Number (please include area code) (715) 262-5788
Street or Route (Mailing Address) 577 Coconino St	
City, State/Zip Code Plover WI 54021	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000?" ☐ Yes ☒ No

3. Comments:

4. Position (Please check one):

☐ As interest may appear

☐ In support

☒ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 8-31-05	Do you wish to make an oral statement? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Name VIRGIL HAMMERSTAD	Telephone Number (please include area code) (715) 386-8902
Street or Route (Mailing Address) 333 GALAHAD RD. N.	
City, State, Zip Code Hudson Wisconsin 54001	
1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)	

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☐ No

3. Comments:

4. Position (Please check one):

☐ As interest may appear

☐ In support

☐ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 31 Aug 05	Do you wish to make an oral statement? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Name DON HILLMAN	Telephone Number (please include area code) ()	
Street or Route (Mailing Address) 811 LAKE ST		
City, State, Zip Code Prescott WI		

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☐ No

3. Comments:

4. Position (Please check one): ☐ As interest may appear ☐ In support ☒ In opposition


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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date	8 - 31 - 05	Do you wish to make an oral statement?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Name		Telephone Number (please include area code)	(715) 821-5623
Street or Route (Mailing Address)	 Mr. Francis H. Ogden 710 Valley View Dr. River Falls, WI 54022		
City, State, Zip Code			

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

PRESIDENT, CITIZENS FOR RESPONSIBLE
ZONING AND LANDOWNER RIGHTS, INC.

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☒ No

3. Comments:

4. Position (Please check one):

☐ As interest may appear

☐ In support

☒ In opposition

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Department of Natural Resources

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Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 8-31-05	Do you wish to make an oral statement? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Name Bill Clapp	Telephone Number (please include area code) (651) 433-5514
Street or Route (Mailing Address) 19955 Quinwell Ave. N.	
City, State, Zip Code Scandia MN 55073	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

St. Croix River Assoc.

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☐ No

3. Comments:

4. Position (Please check one): ☐ As interest may appear ☒ In support ☐ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date AUG. 31 '08	Do you wish to make an oral statement? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Name RON CARLSON	Telephone Number (please include area code) (651) 436 3390
Street or Route (Mailing Address) 1241 QUINLAN S.	
City, State, Zip Code LAKELAND MN 55043	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)
SIERRA CLUB, CONSERVATION CHAIR, ST. CROIX VALLEY INTERSTATE GROUP

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☐ No

3. Comments:

THE SIERRA CLUB SUPPORTS THE DEPT. DETERMINATION OF OHWM

4. Position (Please check one):

☐ As interest may appear

☒ In support

☐ In opposition

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Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 8.31.05 Do you wish to make an oral statement? ☒ Yes ☐ No

Name M. C. GRESSER Telephone Number (please include area code)
()

Street or Route (Mailing Address)

2905 LEXINGTON AVE. SO.

City, State, Zip Code

EAGAN, MN 55121

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

myself

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☒ No

3. Comments:

4. Position (Please check one):

☐ As interest may appear

☐ In support

☐ In opposition

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HEARING APPEARANCE
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PLEASE PRINT

Date 8-31-05	Do you wish to make an oral statement? Maybe	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Name Georgia Krusella, Patricia King	Telephone Number (please include area code) (715) 386-2509	
Street or Route (Mailing Address) 1050 S. Front St., 1020 S. Front St.		
City, State, Zip Code Hudson, WI 54016 Hudson, WI 54016		
1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.) Kingcrest, Inc. - Manager - Boat Ramp. Patricia A King - I am the daughter of		
2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? Kingcrest, Inc.		
3. Comments: wish 675. above sea level to be the ordinary high H ₂ O mark.		
4. Position (Please check one): <input type="checkbox"/> As interest may appear <input type="checkbox"/> In support <input type="checkbox"/> In opposition		

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 8/3/05 Do you wish to make an oral statement? ☐ Yes ☒ No

Name Patrick Collins Telephone Number (please include area code) (715) 549-5652

Street or Route (Mailing Address) 1309 53rd St.

City, State, Zip Code Hudson WI 54016

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

Myself

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☒ No

3. Comments:

Make it 682.0 MSL -

4. Position (Please check one):

☐ As interest may appear

☒ In support

☐ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 8/31/05	Do you wish to make an oral statement? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Name Jim Sieben	Telephone Number (please include area code) (763) 852 0443
Street or Route (Mailing Address) 9349 Cortland Cr +	
City, State, Zip Code Woodbury, MN 55125	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

River Alliance of WI (RAW)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"?

☐ Yes ☒ No

3. Comments:

4. Position (Please check one):

☐ As interest may appear

☒ In support

☐ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 8-31-05	Do you wish to make an oral statement? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Name CARL Mellum / MP 720TH ST.	Telephone Number (please include area code) (612) 578-2405
Street or Route (Mailing Address) W 12775 720TH Street, R	
City, State, Zip Code River Falls, WI 54022	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

mp 720TH ST

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☒ No

3. Comments: Please, I Advocate WIDMA Adapt Rivers

Edge A 675' feet mean sea level - 1912 datum AS THE
POINT FROM WHICH SETBACK IS TO BE MEASURED ON ST. CRUX

4. Position (Please check one):

☐ As interest may appear

☐ In support

☐ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date	8/30/05	Do you wish to make an oral statement?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Name	DEBORAH DRAGON	Telephone Number (please include area code)	(715) 386-1161
Street or Route (Mailing Address)	233 Starr Wood		
City, State, Zip Code	Hudson, WI 54016		

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000?" ☐ Yes ☒ No

3. Comments:

4. Position (Please check one):

☐ As interest may appear

☐ In support

☒ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date	08-31-05	Do you wish to make an oral statement?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Name	Hugh H. Gwin	Telephone Number (please include area code)	(715) 749-4003
Street or Route (Mailing Address)	953 104 th Ave.		
City, State, Zip Code	Roberts, WI 54023 - 8439		

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

self

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000?" ☐ Yes ☐ No

3. Comments:

4. Position (Please check one):

☐ As interest may appear

☐ In support

☐ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 8-31-05	Do you wish to make an oral statement? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Name Don K. Williams	Telephone Number (please include area code) (715) 386-9716
Street or Route (Mailing Address) 859 TAMARACK LN	
City, State, Zip Code HUDSON WI 54001	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

Self

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000?" ☐ Yes ☒ No

3. Comments:

4. Position (Please check one):

☐ As interest may appear

☐ In support

☒ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date	8/31/05	Do you wish to make an oral statement?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Name	William DRAGON	Telephone Number (please include area code)	(715) 386 1161
Street or Route (Mailing Address)	233 Starr Wood		
City, State, Zip Code	Hudson, WI 54014		

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☒ No

3. Comments:

4. Position (Please check one):

☐ As interest may appear

☐ In support

☒ In opposition

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#1
State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date	8-31-05	Do you wish to make an oral statement?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Name	Molly Shodeen	Telephone Number (please include area code)	(651) 772-7945
Street or Route (Mailing Address)	MD DR 1200 Warner Road		
City, State, Zip Code	St. Paul Mn 55106		

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☐ No

3. Comments: will read into the record

4. Position (Please check one): ☐ As interest may appear ☒ In support ☐ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 31 Aug 05	Do you wish to make an oral statement? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Name MARCUS L. WEST	Telephone Number (please include area code) Home cell 651) 338-3021 / 715-262-8344
Street or Route (Mailing Address) N 7191 1280th St	
City, State, Zip Code River Falls, WI 54022	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000?" ☐ Yes ☒ No

3. Comments:

OTWMM should be changed on the St. Croix to reflect MN statute regarding zoning and setback based on Rivers edge at 675' msl

4. Position (Please check one):

☐ As interest may appear

☐ In support

☒ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 8/31/05	Do you wish to make an oral statement? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Name Michael Mayer	Telephone Number (please include area code) (952) 891-7181
Street or Route (Mailing Address) 4790 Weston Hills Dr	
City, State, Zip Code Eagan MN 55123	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☒ No

3. Comments:

4. Position (Please check one):

☐ As interest may appear

☐ In support

☐ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 8-31-05	Do you wish to make an oral statement? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Name PATRICK DOLAN	Telephone Number (please include area code) (715) 426-0101
Street or Route (Mailing Address) W12560 85th Ave	
City, State, Zip Code River Falls WI 54022	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☒ No

3. Comments:

4. Position (Please check one):

☐ As interest may appear

☐ In support

☒ In opposition

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Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 8/31/05	Do you wish to make an oral statement? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Name Gary Melstrom	Telephone Number (please include area code) (715) 262-4006
Street or Route (Mailing Address) 721 Lake St.	
City, State, Zip Code Prescott, Wi. 54021	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☒ No

3. Comments:

4. Position (Please check one): ☐ As interest may appear ☐ In support ☒ In opposition

TWIN SPRINGS SOUTH
C.O.S

	common name	wetland IND	conversion	Coefficient of Conservatism
	Emory's sedge	OBL	1	6
dlings)	silver maple	FACW	2	2
py)	silver maple	FACW	2	2
			1.666667	3.333333

	Emory's sedge	OBL	1	6
dlings)	silver maple	FACW	2	2
	river birch	FACW	2	6
py)	silver maple	FACW	2	2
			1.75	4

	Emory's sedge	OBL	1	6
	moist bank pimpernal	OBL	1	6
	green ash	FACW	2	2
	false dragonhead	FACW	2	7
py)	silver maple	FACW	2	2
			1.6	4.6

	Emory's sedge	OBL	1	6
	moist bank pimpernal	OBL	1	6
py)	silver maple	FACW	2	2
	American linden or basswood	FACU	4	5
			2	4.75

	Emory's sedge	OBL	1	6
	moist bank pimpernal	OBL	1	6
ings)	silver maple	FACW	2	2
py)	silver maple	FACW	2	2
	American linden or basswood	FACU	4	5
canopy)	green ash	FACW	2	2
			2	3.833333

dlings)	silver maple	FACW	2	2
	Emory's sedge	OBL	1	6
py)	silver maple	FACW	2	2
	American linden or basswood	FACU	4	5
canopy)	green ash	FACW	2	2
			2.2	3.4

dlings)	silver maple	FACW	2	2
py)	silver maple	FACW	2	2
	American linden or basswood	FACU	4	5
canopy)	green ash	FACW	2	2

		2.5	2.75	
	wild ginger	5	7	
	little buttercup	FACW-	2	1
	rue anemone		5	7
	reed-canary grass	FACW+	2	
	common wood sorrel	FACU	4	0
ings)	silver maple	FACW	2	2
	fragile fern	FACU	4	6
	Canada anemone	FACW	2	4
py)	silver maple	FACW	2	2
py)	American elm	FACW-	2	3
	solomon's seal		5	6
		3.181818	3.8	This where there appears to be a break from hyrophilic to upland vegetation
	columbine	FAC-	3	5
	marsh fern			7
	wild ginger		5	7
py)	silver maple	FACW	2	2
py)	American hornbeam	FAC	3	6
		3.25	5.4	According to the mean Coefficients of Conservatism, the plant community is very tolerant (0-3), to moderately tolerant (4-6) of disturbance. Flooding would be a disturbance
	wild ginger		5	7
	meadowrue	FACW-	2	4
	solomon's seal		5	6
	fragile fern	FACU	4	6
	little buttercup	FACW-	2	1
	Jack-in-the-pulpit	FACW-	2	5
	moonseed vine	FAC	3	5
	arrow-leaved aster		5	3
	bloodroot	FACU-	4	6
	gooseberry		5	3
y)	silver maple	FACW	2	2
		3.545455	4.363636	

Feet from point - toward shore					Community affiliation
0	<i>Robinia pseudoacacia</i>	black locust	FACU-	4 exotic	W Weed
	<i>Zanthoxylum americanum</i>	prickly ash			3 SDM
	<i>Panicum oligosanthos</i>		FACU	4	4 PDM
	<i>Ulmus americana</i>		FACW-	2	3
				3.33333	3.33333
2	<i>Panicum oligosanthos</i>		FACU	4	4
	<i>Aster ontarionis</i>		FAC	3	6 FN Fen
	<i>Panicum virgatum</i>		FAC+	3	4 SB Sand Barrens
				3.33333	4.66667
4	<i>Populus deltoides</i>	cottonwood	FAC+	3	2
	<i>Panicum oligosanthos</i>		FACU	4	4
	<i>Oenothera biennis</i>		FACU	4	1
				2.66667	3
6	<i>Panicum virgatum</i>		FAC+	3	4 SB
	<i>Ambrosia artemisifolia</i>		FACU	4	0
	<i>Cyperus schweinitzii</i>		FACU	4	4 SB
	<i>Erigeron strigosus</i>		FAC-	3	2 SB prevalent
				3.5	2.5
8	bare sand				
	<i>Panicum virgatum</i>		FAC+	3	4 SB
	<i>Ambrosia artemisifolia</i>		FACU	4	0
				3.5	2
10	<i>Panicum virgatum</i>		FAC+	3	4 SB
	<i>Ambrosia artemisifolia</i>		FACU	4	0
	<i>Cyperus schweinitzii</i>		FACU	4	4 SB
	<i>Erigeron strigosus</i>		FAC-	3	2 SB prevalent
	<i>Salix exigua</i>		(OBL)	1	2
				3	2.4
12	<i>Panicum virgatum</i>		FAC+	3	4 SB
	<i>Cyperus schweinitzii</i>		FACU	4	4 SB
	<i>Erigeron strigosus</i>		FAC-	3	2 SB prevalent
				3.33333	3.33333
14	<i>Salix exigua</i>		(OBL)	1	2
There is no clear break in the mean wetland indicator value at this site. The prevalence of species that are indicators of sand barren habitats complicates the computation. This is not an ideal site to determine wetland status from the vegetation.					

Feet from shore

910	sand				
	Panicum virgatum	FAC+	3	4	SB
	Salix exigua	(OBL)	1	2	
			2	3	

914'	sand				
	Panicum virgatum	FAC+	3	4	SB
	Ambrosia artemisifolia	FACU	4	0	WD
	Cyperus schweinitzii	FACU	4	4	SB
			3.666667	2.666667	

920	Panicum virgatum	FAC+	3	4	SB
	Ambrosia artemisifolia	FACU	4	0	WD
			3.5	2	

925 (at soil	Panicum virgatum	FAC+	3	4	SB
	Oenothera biennis	FACU	4	1	
			3.5	2.5	

930	Panicum virgatum	FAC+	3	4	SB
	Panicum oligosanthos	FACU	4	4	
	Vitis riparia	FACW-	2	2	
			3	3.333333	

934	Panicum virgatum lots of bare sand	FAC+	3	4	SB
-----	--	------	---	---	----

940	Panicum virgatum	FAC+	3	4	SB
	Oenothera biennis	FACU	4	1	
	Salix nigra	OBL	1	4	
			2.666667	3	

944	Panicum virgatum	FAC+	3	4	SB
	Oenothera biennis	FACU	4	1	

C.13

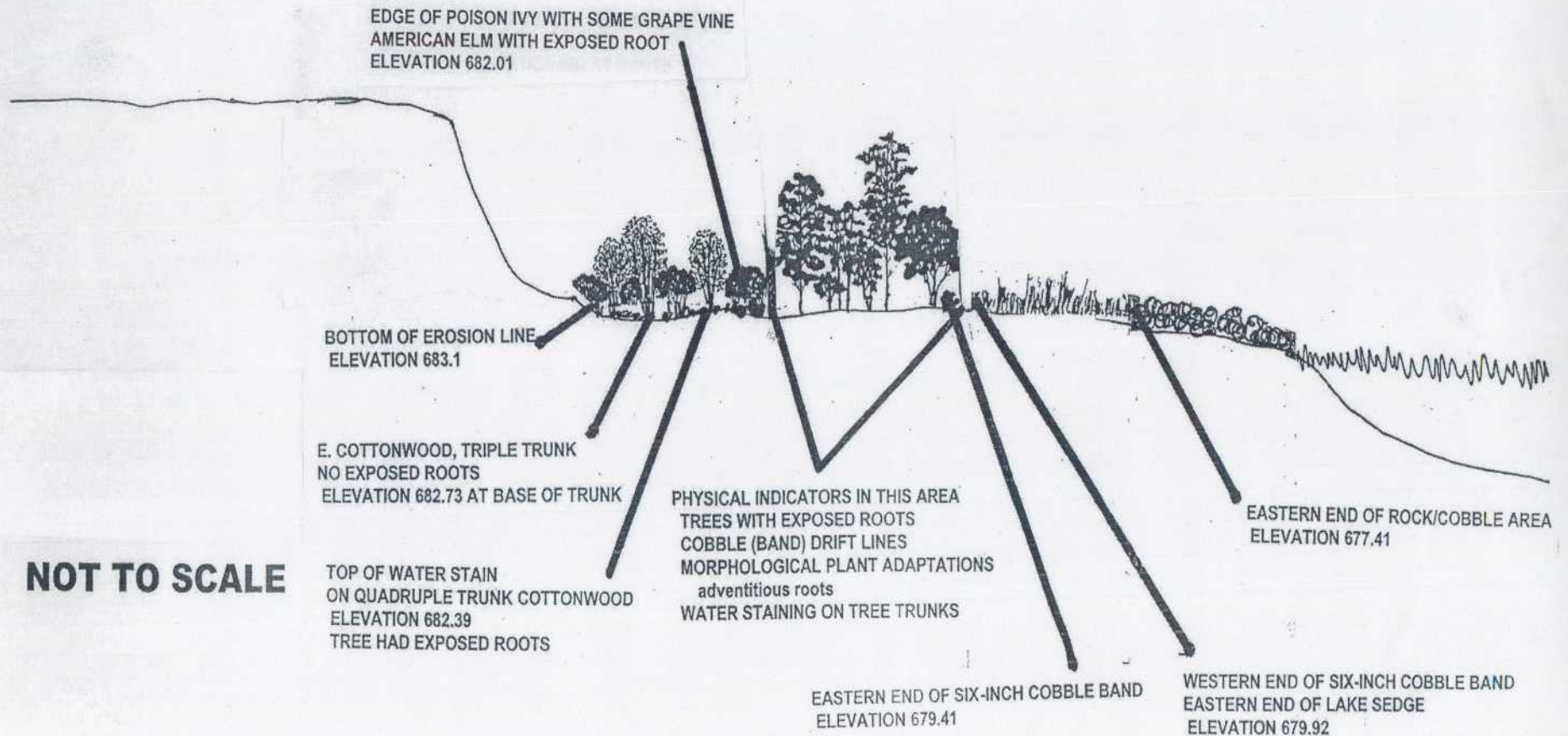
UNION PACIFIC RAILROAD PROPERTY NEAR DAM
TRANSECT 2

WATER LEVEL 676.38 @ 11:30 AM

JULY 13, 2005

HYDRIC SOILS BEGINNING AT WATER LINE TO POISON IVY

HYDROPHYTIC VEGETATION BEGINNING AT WATER LINE TO
POISON IVY



UP2

C.14

Pit at 6 ft from 0

0-6 7.5 YR 3/3

6-12 7.5 YR 3/3---standing water

Pit at 25 ft from 0

0-6 7.5 YR 2.5/1---very moist

6-12 7.5YR 3/3---saturated

Pit at 33 ft from 0

0-6 sand and rocks

6-12 sand 10 YR 4/3

Pit at 75 ft from 0

0-6 sand and rocks

6-12 sand 10 YR 4/3

0-15 ft inland---all rock cobble---no veg

15- 30 ft inland----densely vegetated

- * **Carex lacustris**
- Agrostis gigantea**
- * **Mentha arvensis**
- Salix nigra
- Helenium autumnale
- Spartina pectinata
- Eupatorium perfoliatum
- Aster lanceolatus
- Eupatorium purpureum
- Scutellaria galericulata

-
-
- 30 - 75 ft inland * **Populus deltoides**
- Acer saccharinum**
- * **Fraxinus pennsylvanica**
- Vitis riparia
- Salix nigra
- Ulmus americana

-
-
- 75 - 85 ft inland * **Toxicodendron radicans**
- Ulmus americana
- Populus deltoides
- Vitis riparia
- Robinia pseudoacacia
- Rhamnus cathartica
- Rhus glabra
- Prunus virginiana

- lake sedge OBL
- rusty grass NI (non-native)
- acid grass FACW
- black willow OBL
- spotted wood FACW+
- purple bloodroot FACW+
- boneset FACW+
- marsh aster ?
- Joe-Pye weed FAC
- marsh thistle OBL

- cottonwood FAC+
- silver maple FACW
- green ash FACW
- river grape FACW-
- black willow OBL
- American elm FACW-

- poison ivy FAC+
- American elm FACW-
- cottonwood FAC+
- river grape FACW-
- black locust FACU-
- buckhorn FACU
- sumac FACU
- chokecherry FAC-

following list of plants is a list of low evaluated or species

We stopped veg inventory at 85 ft inlar

BOB ROLLE PROPERTY-TRANSECT 1
WATER LEVEL 678.45
MAY 18, 2005

C.16

NO SOIL BORINGS DONE DUE TO NATURAL RIPRAP

BASE OF OAK AT 33 FEET INLAND FROM WATER
ELEVATION 686.3

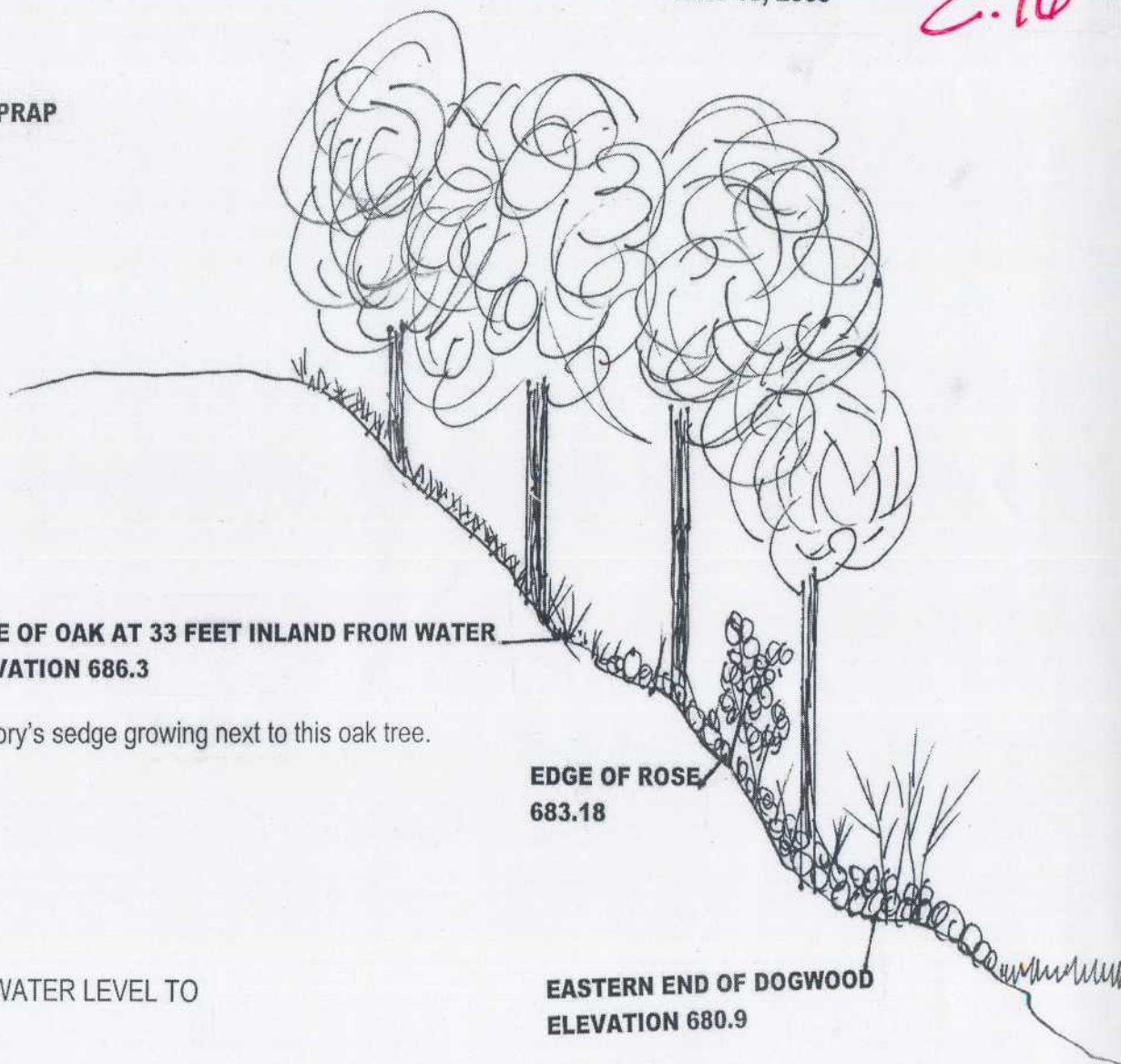
Emory's sedge growing next to this oak tree.

EDGE OF ROSE
683.18

EASTERN END OF DOGWOOD
ELEVATION 680.9

NOT TO SCALE

HYDROPHYTIC VEGETATION BEGINNING AT WATER LEVEL TO
OAK TREE AT 33 FEET INLAND.



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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date	8/31/05	Do you wish to make an oral statement?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Name	Deon Post	Telephone Number (please include area code)	(651) 998-0602
Street or Route (Mailing Address)	1740 Deon Ave NW		
City, State, Zip Code	Stillwater, MN 55082		

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

~~A~~ N/A

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☒ No

3. Comments:

4. Position (Please check one):



As interest may appear



In support



In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date	8-31-05	Do you wish to make an oral statement?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Name	Patrick J. Nolan	Telephone Number (please include area code)	(715) 586-2181
Street or Route (Mailing Address)	1121 1st St		
City, State, Zip Code	Hudson WI 54016		

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☐ No

3. Comments: August 1994 O.H.W.M. delinquency 685.75
inclusion opposed to average deviation

4. Position (Please check one): ☐ As interest may appear ☐ In support ☐ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 8-30-05	Do you wish to make an oral statement? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Name HOWARD GLENN A	Telephone Number (please include area code) (915) 426-5650
Street or Route (Mailing Address) W 12426 832 AVE.	
City, State, Zip Code RIVER FALLS WI 54022	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☒ No

3. Comments:

4. Position (Please check one):

☐ As interest may appear

☐ In support

☒ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date	8.31.05	Do you wish to make an oral statement?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Name	Laura Foster	Telephone Number (please include area code)	()
Street or Route (Mailing Address)	1235 So Front St		
City, State, Zip Code	Hudson, WI 54016		

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000?" ☐ Yes ☒ No

3. Comments:

Support OHWM ① 675'

4. Position (Please check one):

☐ As interest may appear

☐ In support

☐ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 8-31-05	Do you wish to make an oral statement? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Name Jenny Olson	Telephone Number (please include area code) (715) 386 2554
Street or Route (Mailing Address) 2 Proehls Trail	
City, State, Zip Code Hudson, WI 54016	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☒ No

3. Comments:

Support OHM at 675'

4. Position (Please check one):

☐ As interest may appear

☐ In support

☐ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date	8-31-05	Do you wish to make an oral statement?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Name	PAUL MOSBY	Telephone Number (please include area code)	(715) 262-5299
Street or Route (Mailing Address)	W 12821 720 TH AVE		
City, State, Zip Code	RIVER FALLS, WI 54022		

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

ST. CROIX LANDOWNERS ASSN. — PRESIDENT

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000?" ☐ Yes ☐ No

3. Comments:

4. Position (Please check one):

☐ As interest may appear

☐ In support

☒ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date AUGUST 31, 2005	Do you wish to make an oral statement? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Name RICHARD A. MARZOLF	Telephone Number (please include area code) (715) 381-1010
Street or Route (Mailing Address) 276 SALISHAN DRIVE	
City, State, Zip Code HUDSON, WISCONSIN 54016-8060	
1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)	

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000?" ☐ Yes ☒ No

3. Comments: THANK YOU SINCERELY FOR LISTENING & FOR BEING OPEN.
Buz Maryoff

4. Position (Please check one): ☐ As interest may appear ☐ In support ☐ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date	8-31-05	Do you wish to make an oral statement?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Name	JOE MERCHAK	Telephone Number (please include area code)	(715) 531-0542
Street or Route (Mailing Address)	1723 LAUREL AVENUE		
City, State, Zip Code	HUDSON, WI 54016		

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☐ No

3. Comments:

4. Position (Please check one): ☐ As interest may appear ☐ In support ☒ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date	8/31/2005	Do you wish to make an oral statement?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Name	James R. Johnson	Telephone Number (please include area code)	(715) 381-7105
Street or Route (Mailing Address)	737 Liberty Lane		
City, State, Zip Code	Hudson, WI 54016		

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

Interested riparian owners

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000?" ☐ Yes ☒ No

3. Comments:

681.5 is too high for OHWM

4. Position (Please check one):

☐ As interest may appear

☐ In support

☒ In opposition to 681.5

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date <i>August 31, 2005</i>	Do you wish to make an oral statement? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Name <i>Franz Altpeier</i>	Telephone Number (please include area code) <i>(715) 262-5407</i>
Street or Route (Mailing Address) <i>1110 North Lake St.</i>	
City, State, Zip Code <i>Prescott, WZ 54021-1808</i>	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☐ No

3. Comments:

4. Position (Please check one):

☐ As interest may appear

☐ In support

☐ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date <u>August 31, 2005</u>	Do you wish to make an oral statement? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Name <u>Charles A. Macdonell</u>	Telephone Number (please include area code) <u>(715) 386-3424</u>
Street or Route (Mailing Address) <u>308 North Cove Road</u>	
City, State, Zip Code <u>Hudson, WI 54016</u>	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☐ No

3. Comments:

4. Position (Please check one):

☒ As interest may appear

☐ In support

☐ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date	8/31/05	Do you wish to make an oral statement?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Name	Dennis D. Darnold	Telephone Number (please include area code)	(715) 386 - 4776
Street or Route (Mailing Address)	City Hall 505 Third St.		
City, State, Zip Code	Hudson, WI 54016		

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

City of Hudson, WI - Community Development Director

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000?"

☐ Yes ☒ No

3. Comments:

Probably will submit written comments
within 30 day comment period.

4. Position (Please check one):

☐ As interest may appear

☐ In support

☐ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 8/31/05	Do you wish to make an oral statement? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Name FRANK FARR	Telephone Number (please include area code) (651) 457-9005
Street or Route (Mailing Address) 603 LAKE ST N	
City, State, Zip Code Prescott, WI 54021	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000?" ☐ Yes ☒ No

3. Comments:

4. Position (Please check one):

☐ As interest may appear

☐ In support

☒ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 8-31-05	Do you wish to make an oral statement? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Name Donna Murr	Telephone Number (please include area code) (651) 552-8896
Street or Route (Mailing Address) 8897 Compton Drive	
City, State, Zip Code Inver Grove Heights, MN 55076	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☒ No

3. Comments:

4. Position (Please check one): ☐ As interest may appear ☐ In support ☐ In opposition

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State of Wisconsin
Department of Natural Resources
HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 8/31/05	Do you wish to make an oral statement? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Name Kathy Halberg	Telephone Number (please include area code) (715) 425-5234
Street or Route (Mailing Address) 161 Glenmont Rd.	
City, State, Zip Code River Falls WI 54022	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☐ No

3. Comments:

4. Position (Please check one):



As interest may appear



In support



In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 8-31-05	Do you wish to make an oral statement? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Name Judith Green	Telephone Number (please include area code) (715) 386 7977
Street or Route (Mailing Address) 170 Starr Wood	
City, State, Zip Code Hudson, WI 54016	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☒ No

3. Comments:

4. Position (Please check one):

☒ As interest may appear

☐ In support

☒ In opposition

Will submit
written response

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 5-31-05	Do you wish to make an oral statement? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Name Bob Bezek	Telephone Number (please include area code) (715) 386-4680
Street or Route (Mailing Address) 1101 Carmichael Road	
City, State, Zip Code Hudson, WI 54106	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

St. Croix Co. Planning & Zoning

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☒ No

3. Comments:

4. Position (Please check one):

☒ As interest may appear

☐ In support

☐ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date <u>8-31-05</u>	Do you wish to make an oral statement? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Name <u>Lee Halberg</u>	Telephone Number (please include area code) <u>(715) 425-5234</u>
Street or Route (Mailing Address) <u>161 Glenmont Road</u>	
City, State, Zip Code <u>River Falls WI 54022</u>	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☐ No

3. Comments:

4. Position (Please check one):

☒ As interest may appear

☐ In support

☐ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date	8/31/05	Do you wish to make an oral statement?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Name	BRIAN ADAMS	Telephone Number (please include area code)	(715) 483-3284 x629
Street or Route (Mailing Address)	PO BOX 1121 ST CROIX NSR, PO BOX 1121		
City, State, Zip Code	ST CROIX FALLS, WI 54024		
1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)			
ST CROIX NATIONAL SCENIC RIVERWAY NATIONAL PARK SERVICE			
2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000?"			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
3. Comments:			
WITH WRITTEN COMMENT SUBMITTED			
4. Position (Please check one):			
<input type="checkbox"/> As interest may appear <input checked="" type="checkbox"/> In support <input type="checkbox"/> In opposition			

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 8/31/05	Do you wish to make an oral statement? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Name MARY JO LINDBERG	Telephone Number (please include area code) (715) 386-3405
Street or Route (Mailing Address) 276 WESTGROVE RD	
City, State, Zip Code HUDSON, WI 54010	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☒ No

3. Comments:

4. Position (Please check one): ☒ As interest may appear ☐ In support ☐ In opposition

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State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date 8/31/05	Do you wish to make an oral statement? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Name Robert Heise	Telephone Number (please include area code) (715) 684-2874 x129
Street or Route (Mailing Address) Ag. Center - 1960 8th Ave. BALDWIN, WISC. 54002	
City, State, Zip Code	

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

St. Croix County, Land Cons. Dept

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000?" ☐ Yes ☒ No

3. Comments:

4. Position (Please check one):

☒ As interest may appear

☐ In support

☐ In opposition

**THIS FORM IS TO BE COMPLETED AND SUBMITTED
BEFORE THE START OF THE HEARING.**

Personally identifiable information on this form is not intended to be used for any other purpose.

State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date	8-31-05	Do you wish to make an oral statement?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Name	Steven B. Goff	Telephone Number (please include area code)	(715) 425-8161
Street or Route (Mailing Address)	258 Riverside Drive		
City, State, Zip Code	River Falls WI 54022		

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

Mike Gresser

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000"? ☐ Yes ☐ No

3. Comments:

4. Position (Please check one):

☐ As interest may appear

☐ In support

☐ In opposition

**THIS FORM IS TO BE COMPLETED AND SUBMITTED
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be used for any other purpose.

State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

PLEASE PRINT

Date	8-31-05	Do you wish to make an oral statement?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Name	Linda Ewing	Telephone Number (please include area code)	(715) 386-5722
Street or Route (Mailing Address)	1100 Golden Oaks Dr.		
City, State, Zip Code	Hudson WI 54016		

1. Representing (If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

2. Regarding rule proposals only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114, Wis. Stats., as "a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which employs fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000?" ☐ Yes ☐ No

3. Comments:

I Am in Favor of 675' for
High water mark

4. Position (Please check one):

☐ As interest may appear

☐ In support

☐ In opposition

FORM IS BE COMPLETED AND SUBMITTED

BE THE SET OF THE HEARING.

Any identification information on this form is not intended to
for any other purpose.

State of Wisconsin
Department of Natural Resources

HEARING APPEARANCE
Form 8300-14 Rev. 1-97

EAE PRINT

Do you wish to make an oral statement?

☐ Yes

☒ No

Telephone Number (please include area code)

(715) 386 - 2531

Route (Mailing Address)

9 Calahad Rd N.

City, Zip

Dea WI 54016

If you are the authorized representative of some other person or organization, identify who you are representing and your title.)

Small business representation only. Small business representation: Are you representing the interests of a small business as defined by s. 227.114,
that is, as a business entity, including its affiliates, which is independently owned and operated and not dominant in its field, and which
has fewer than 25 full-time employees or which has gross annual sales of less than \$2,500,000?

☐ Yes

☐ No

Comments:

on (Please check one):

☒ As interest may appear

☐ In support

☐ In opposition

C.07

HYDROPHYTIC VEGETATION BEGINNING AT WATER LEVEL TO
DEBRIS/DRIFT LINE AT 30 FEET INLAND

HYDRIC SOILS BEGINNING AT WATER LEVEL TO DEBRIS/DRIFT
LINE AT 20 FEET INLAND---WE STOPPED SOIL BORINGS AT
THIS POINT AS STEEP SLOPE HAD HORSETAIL GROWTH AND
SLIGHT WATER FLOW FROM BOTTOM OF SLOPE, BOTH OF
WHICH INDICATED A HILLSIDE SEEP.

TWIN SPRINGS-TRANSECT 2

**TOP OF MOSS LINE
ELEVATION 682.07**

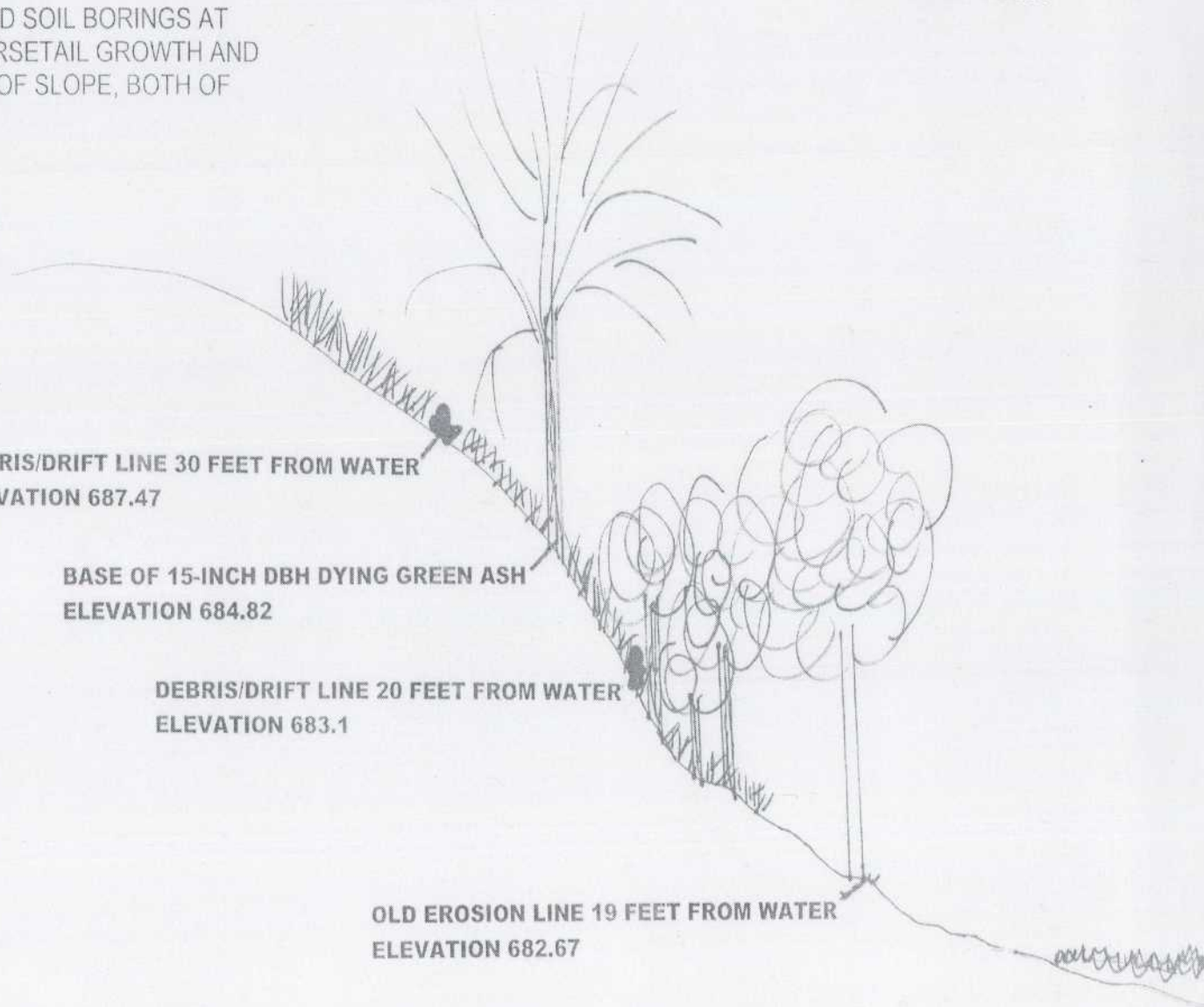
**DEBRIS/DRIFT LINE 30 FEET FROM WATER
ELEVATION 687.47**

**BASE OF 15-INCH DBH DYING GREEN ASH
ELEVATION 684.82**

**DEBRIS/DRIFT LINE 20 FEET FROM WATER
ELEVATION 683.1**

**OLD EROSION LINE 19 FEET FROM WATER
ELEVATION 682.67**

NOT TO SCALE



C.07

TWIN SPRINGS-TRANSECT 2

DUE TO HIGH WATER ON MAY 19, 2005, FIELD DAY, WE RE-SURVEYED TRANSECT 2 ON JULY 12, 2005

THE FIRST THREE POINTS ARE AT THE EROSION LINE NOTED IN THE SURVEY DONE MAY 19, 2005. WE COULD NOT SURVEY THE TOP AND BOTTOM OF EITHER THE EROSION LINE OR THE EXPOSED ROOTS OF THE ASH TREE ON MAY 19, 2005.

**TOP OF EROSION LINE
ELEVATION 682.32**

**BOTTOM OF EROSION LINE
ELEVATION 680.88**

**TOP OF EXPOSED ROOTS OF GREEN ASH
ELEVATION 682.30**

**BOTTOM OF EXPOSED ROOTS OF GREEN ASH
ELEVATION 680.34**

TS2

C.08

Pit @ water's edge

0-6 7.5 YR 3/2----free water

6-8 7.5 YR 3/1

Pit @ erosion line 19 ft from 0

0-2 10 YR 2/1

2-5 10YR 7/3 with mottles, mottles are 7.5 YR 5/6

Distance from Species	common name	wetland ID
0 Carex emoryii	Emory's sedge	OBL
Iris versicolor	blue-flag iris	OBL
<i>Equisetum laevigatum</i>	smooth horsetail	FACW
<i>Acer saccharinum</i> (canopy)	silver maple	FACW
<i>Fraxinus pennsylvanica</i> (canopy)	green ash	FACW

10 Carex emoryii	Emory's sedge	OBL
Equisetum laevigatum	smooth horsetail	FACW
<i>Anemone canadensis</i>	Canada anemone	FACW
<i>Ulmus americana</i> (seedlings)	American elm	FACW-
<i>Acer saccharinum</i> (canopy)	silver maple	FACW
<i>Fraxinus pennsylvanica</i> (canopy)	green ash	FACW
<i>Ulmus americana</i> (canopy)	American elm	FACW-

20 Equisetum laevigatum	smooth horsetail	FACW
Anemone canadensis	Canada anemone	FACW
Moss		
<i>Fraxinus pennsylvanica</i> (canopy)	green ash	FACW
<i>Ulmus americana</i> (canopy)	American elm	FACW-

30 Equisetum laevigatum	smooth horsetail	FACW
Zanthoxylum americanum	prickly ash	
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	FACW-
<i>Ribes cynobasti</i>	gooseberry	
<i>Pathenocissus quinquefolia</i>	Virginia creeper	FAC-
<i>Thalictrum dasycarpum</i>	meadowrue	FACW-
<i>Galium triflorum</i>	sweet-scented bedstraw	FACU+
<i>Phalaris arundinacea</i>	reed-canary grass	FACW+
<i>Ulmus americana</i> (canopy)	American elm	FACW-
<i>Quercus rubra</i> (canopy)	red oak	FACU

34 Equisetum laevigatum	smooth horsetail	FACW
Zanthoxylum americanum	prickly ash	
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	FACW-

HT904 291595 01/01

conversion Coefficient of Conservation

1	5	PO.2
1	5	
2	2	
2	2	
2	2	
1.5	3.4	

1	5	
2	2	
2	4	
2	3	
2	2	
2	2	According to the wetland classification system, this is a very tolerant (1-3) plant species.
2	3	
1.537143	3.142857	

2	2	
2	4	
2	2	
2	3	
2	3	

2	2	
5	3	
2	5	
5	3	
3	5	
2	4	
4	5	
2	3	
2	3	
4	5	
3.1	3.555556	This value represents the ratio of the plant species to the total number of plant species in the wetland.

2	2	
5	3	
2	5	

Pathenocissus quinquefolia	Virginia creeper	FAC-
Polygonatum pubescens	solomon's seal	
Impatiens capensis	jewelweed	FACW
Ribes cynobasti	gooseberry	
Ulmus americana (canopy)	American elm	FACW-
Acer rubrum (canopy)	red maple	FAC
Juniperus virginiana (canopy)	eastern red cedar	FACU

3	5
5	8
2	2
5	3
2	3
3	3
4	3
13	18

POJ

C.11

LAKE MALLALIEU DAM-TRANSECT 1
WATER STAINS NORTH SIDE OF DAM ON CONCRETE WALL
WATER LEVEL 676.40 @ 10:00 AM
JULY 13, 2005

NO SOIL BORINGS
NO VEGETATION IDENTIFIED

TOP OF GREY STAIN
ELEVATION 682.16

TOP OF BLEACH STAIN
ELEVATION 681.73

TOP OF BLEACH STAIN &
BOTTOM OF GREY STAIN
ELEVATION 681.51

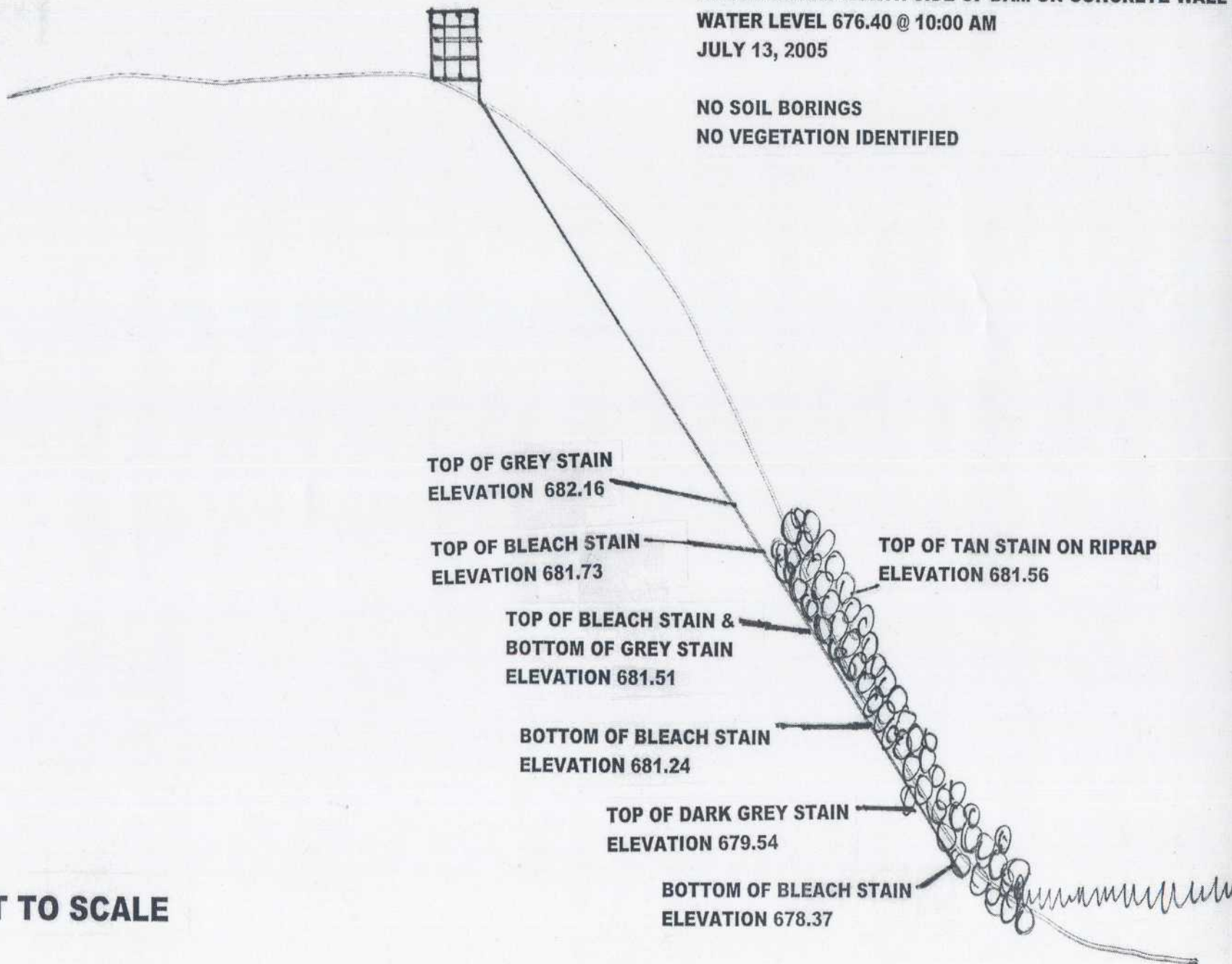
BOTTOM OF BLEACH STAIN
ELEVATION 681.24

TOP OF DARK GREY STAIN
ELEVATION 679.54

BOTTOM OF BLEACH STAIN
ELEVATION 678.37

TOP OF TAN STAIN ON RIPRAP
ELEVATION 681.56

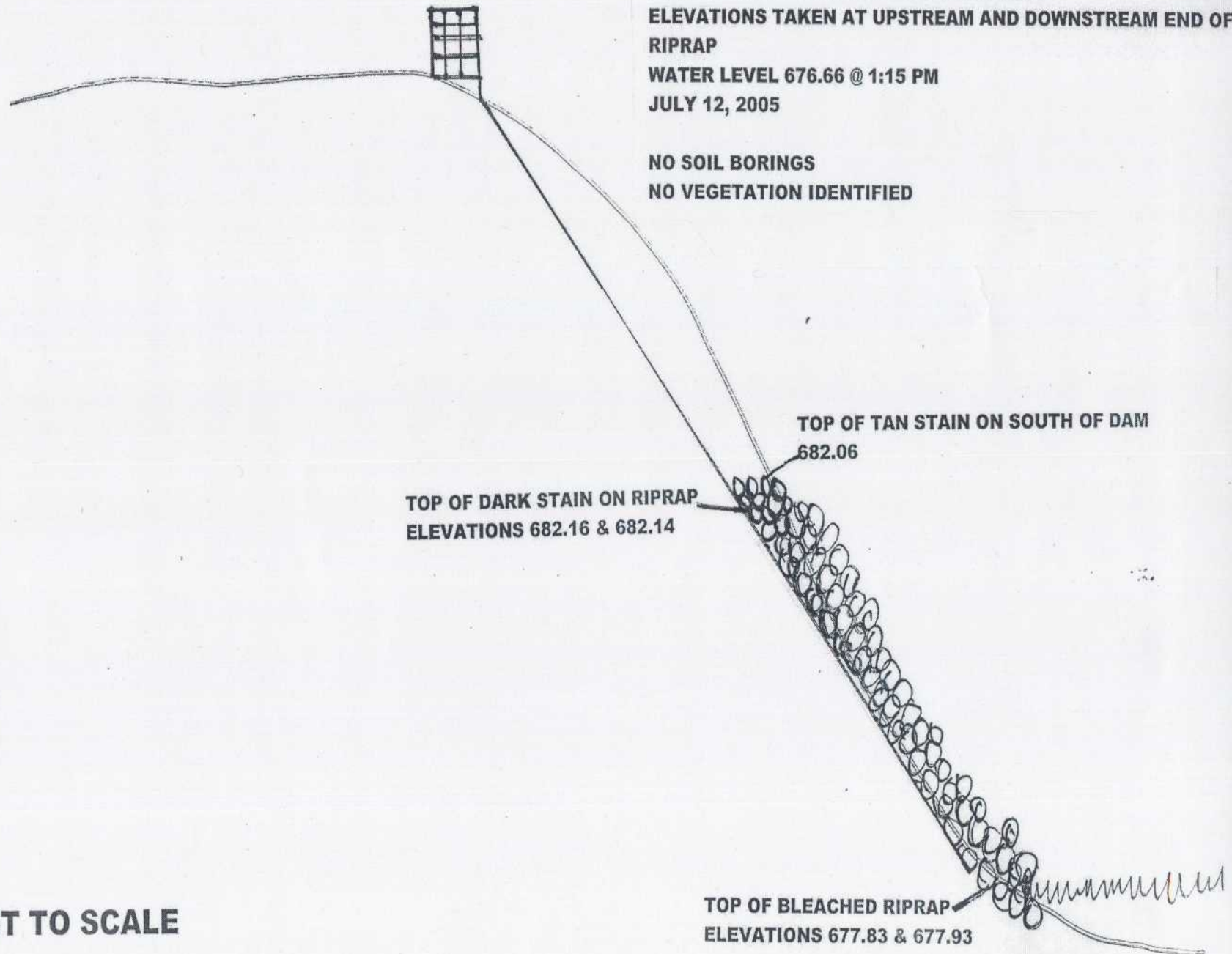
NOT TO SCALE



C.11

LAKE MALLALIEU DAM-TRANSECT 1
WATER STAINS ON RIPRAP SOUTH OF DAM
ELEVATIONS TAKEN AT UPSTREAM AND DOWNSTREAM END OF
RIPRAP
WATER LEVEL 676.66 @ 1:15 PM
JULY 12, 2005

NO SOIL BORINGS
NO VEGETATION IDENTIFIED



C.11

UNION PACIFIC RAILROAD PROPERTY SOUTH OF DAM

WE DID NOT DO SOIL BORINGS OR IDENTIFY VEGETATION IMMEDIATELY SOUTH OF THE DAM AS IT WAS NOT A DESIGNATED TRANSECT. WE DID NOTE OTHER PHYSICAL INDICATORS LISTED BELOW:

**BASE OF E. COTTONWOOD, 20-INCH DBH
ELEVATION 678.28**

**TOP OF DARK STAIN ON COTTONWOOD (STAIN IS SAME COLOR FROM BASE TO TOP)
ELEVATION 682.40**

**PEA GRAVEL DRIFT LINE 8 FEET FROM WATER LEVEL
ELEVATION 678.33**

**DRIFT LINE OF 6- TO 9-INCH MIXED COBBLES WITH SOME PEA GRAVEL 17 FEET FROM WATER
ELEVATION 679.52**

**BASE OF EROSION LINE (PREDOMINATE OF THREE)
ELEVATION 683.37**

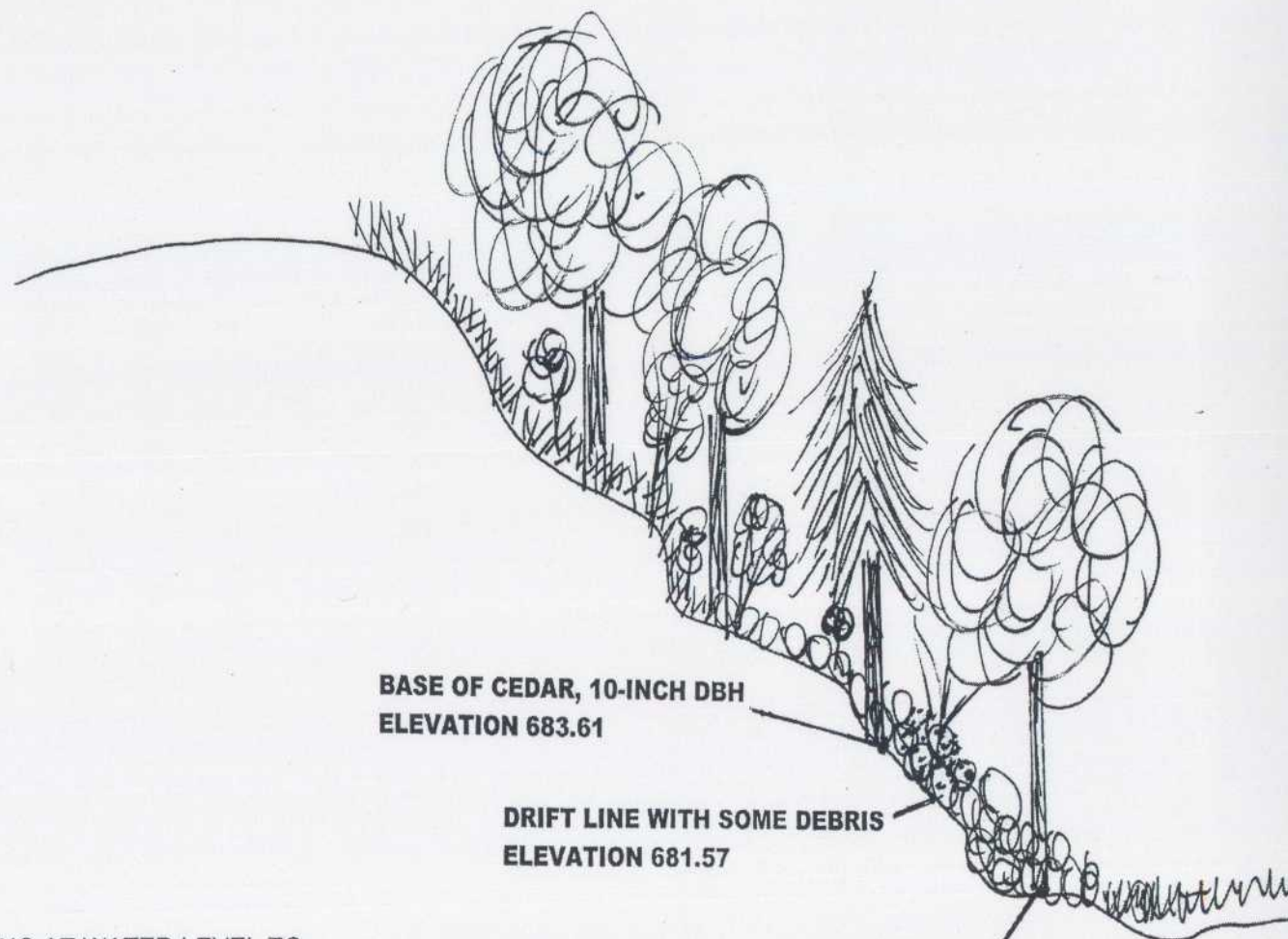
**OLDER EROSION LINE AT BASE OF SLOPE
ELEVATION 687.38**

NOTED, BUT DID NOT SURVEY, ANOTHER EROSION LINE IS ABOVE LINE AT 687.38

C.19

BOB ROLLE PROPERTY-TRANSECT 2
WATER LEVEL 678.45
MAY 18, 2005

NO SOIL BORINGS DONE DUE TO NATURAL RIPRAP



NOT TO SCALE

HYDROPHYTIC VEGETATION BEGINNING AT WATER LEVEL TO
CEDAR AT 26 FEET INLAND

EXPOSED ROOT OF AMERICAN ELM, 8-INCH DBH
7 FEET FROM WATER
ELEVATION 679.95

C.22

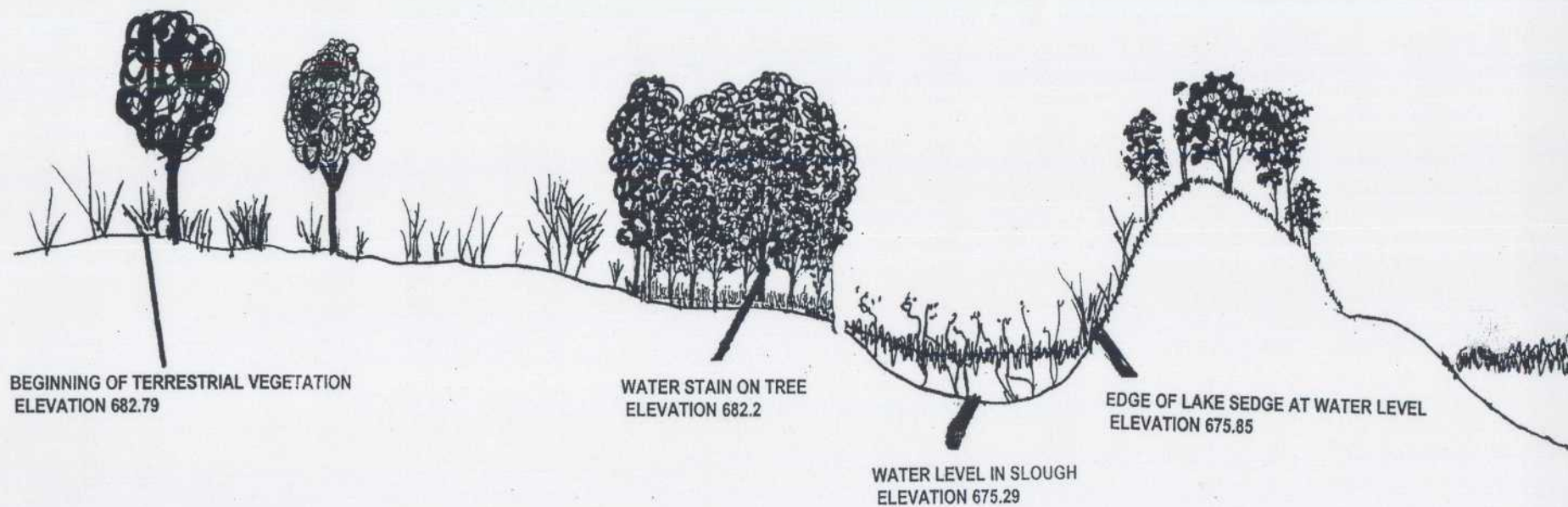
**HYDRIC SOILS BEGINNING AT WATER TO AREA ADJACENT TO
PICNIC AREA**

**HYDROPHYTIC VEGETATION BEGINNING AT WATER TO AREA
ADJACENT TO PICNIC AREA**

**KINNICKINNIC STATE PARK—TRANSECT 1
SLOUGH AREA**

WATER LEVEL 675.55

SEPTEMBER 7, 2004



NOT TO SCALE

C.23

K1

Pit @ 15 ft from 0
7.5 YR 6/3 surface sand
7.5 YR 5/3 subsurface sand

Pit @ 25 fr 0
7.5 YR 6/3 surface sand
7.5 YR 5/3 subsurface sand

Pit @ 40 ft fr 0
7.5 YR 6/3 surface
10YR 6/3 with 10YR2/1 subsurface
10YR 6/4

Pit @ 98 ft fr 0
0-6 7.5 YR 6/3 dry sand
6-12 10YR 6/3 moist sand
12-18 10YR 5/3 moist sand with 5 YR 4/6

Pit @ 116 ft fr 0
10 YR 2/1 sand with high organic content

Pit @ 216 ft fr 0
0-6 10 YR 3/2 sand
6-12 7.5 YR 6/8 mottles with base sand color 10YR 6/3

Pit @ 391 ft fr 0
0-20 10YR 6/3 base sand
20-24 10 YR 4/3 with 7.5 YR 4/6 mottles

Pit @ 300 ft from beach adjacent to pier area (point)
0-20 10 YR 6/3 base sand
20-24 10YR 4/3 with 7.5 YR 4/6 mottles

C.27

HYDRIC SOILS BEGINNING AT WATER LEVEL TO BASE OF SLOPE

HYDROPHYTIC VEGETATION BEGINNING AT WATER LEVEL TO BASE OF SLOPE

ALL TREES BEGINNING AT WATER LEVEL TO BASE OF SLOPE HAD EXPOSED ROOTS

PRESCOTT-TRANSECT 1

WATER LEVEL 676.38 @ 2:30 PM

JULY 13, 2005

BASE OF TREE TRUNK
ELEVATION 682.95

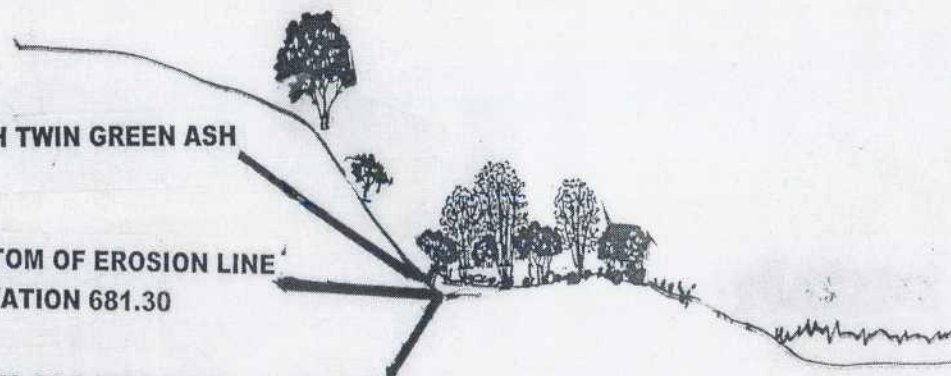
TOP OF EXPOSED ROOTS OF 6-INCH TWIN GREEN ASH
ELEVATION 682.95

BOTTOM OF EROSION LINE
ELEVATION 681.30

BOTTOM OF EXPOSED ROOTS OF 6-INCH TWIN GREEN ASH
ELEVATION 680.56

NOT TO SCALE

BOTTOM OF EXPOSED ROOTS OF SMALL GREEN ASH
AT FIRST WATERWARD TREE LINE
ELEVATION 678.16



JOB Prescott Beach OFWM Det.

DATE 5-17-2005 PAGE 1

Cloudy 55°F		Texture	Description
B1	Color		
0-2"	7.5YR 3/2	COS	many med. roots
0-8"	2.5YR 3/4	COS	many fine roots
8-15"	2.5YR 3/4	COS	30% gravelly

Notes:

Boulders & cobbles at surface
Water at 8" deep in boring
B1 location is 2 ft from water line

B2	Color	Texture	Description
0-18"	7.5YR 4/3	COS	Through out: many med roots
18-30"	7.5YR 4/3	COS	gravelly & cobbly

Notes:

2.5' damp
B2 location is 12 ft from water

B3	Color	Texture	Description
0-2"	10YR 2/1	S	w/ decomposing leaves
2-24"	7.5YR 4/3	COS	Boulders (40%) coarse roots many medium roots 40% gravel and 30% cobble

PARTY CHIEF

WEATHER

Eunice Post
Cloudy 55°F
rained the A.M.



JOB Prescott Beach OFWM Det.

DATE 5-17-05 PAGE 2

Notes from Jim Klenhans & Emily Lund Pierce Co.

water	
OB1	-2'
XTRC	
OB2	-12'
OB3	-22'
OB4	-32'

"COS = coarse sand"
"S = sand"

B4

0-4" S w/ organic mat. 7.5YR 2.5/1 coarse frag.
15% coarse frag.
4-16" S w/ Boulders medium roots 10YR 3/2
16+ Boulders

9:45 - 11:30 AM

PARTY CHIEF

WEATHER

Eunice Post
Cloudy 55°F rain PM



PLOT PLAN



JOB Prescott Beach OHWM Det.
DATE 5-17-2005 PAGE 3

B5	Color	Texture	Description
0-3"	7.5YR3/2	COS	many coarse roots
3-13"	2.5YR3/4	COS	many medium roots
13-19"	2.5YR3/4	COS	no roots

Notes:

- Boulders and cobbles at surface
- 40% Gravel in each horizon
- 30% Cobble in each horizon
- Water level at 13"
- B5 is 5' from water line

B6	Color	Texture	Description
0-13"	2.5YR3/4	COS	many medium roots
13-24"	2.5YR3/4	COS	many fine roots

NOTES

- Boulders (79%) first horizon
- Gravel & Cobble through out (30%)

B7	Color	Texture	Description
0-2"	7.5YR3/2	SL	many coarse roots
2-8"	2.5YR4/4	SCL	many fine roots
8-18"	2.5YR3/3	COS	

Notes:

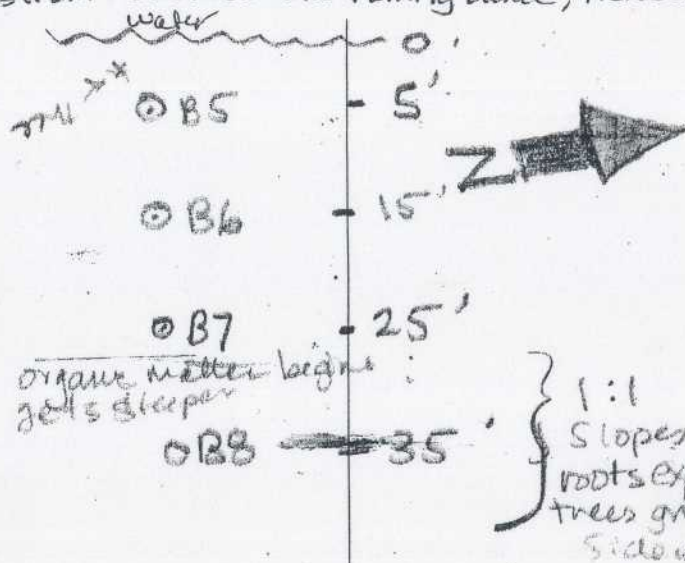
Boulder at surface

PARTY CHIEF Eunice Post

WEATHER Cloudy 55°F



JOB Prescott Beach OHWM Det.
DATE 5-17-2005 PAGE 4
Notes from: Jim Kleinhans & Emily Lund, Pierce Co.



B8	Color	Texture	Description
0-3"	10YR3/2	S	many fine roots
3-16"	10YR3/2	S	no coarse Frag.
Boulders Below (16"+)			

Soil only
30% gravel & cobble

11:30 - 12:30 pm

PARTY CHIEF Eunice Post

WEATHER Cloudy 55°F sprinkling



C.31

HYDRIC SOILS BEGINNING AT WATER LEVEL TO BASE OF SLOPE

HYDROPHYTIC VEGETATION BEGINNING AT WATER LEVEL TO BASE OF SLOPE

ALL TREES BEGINNING AT WATER LEVEL TO BASE OF SLOPE HAD EXPOSED ROOTS

PRESCOTT-TRANSECT 2

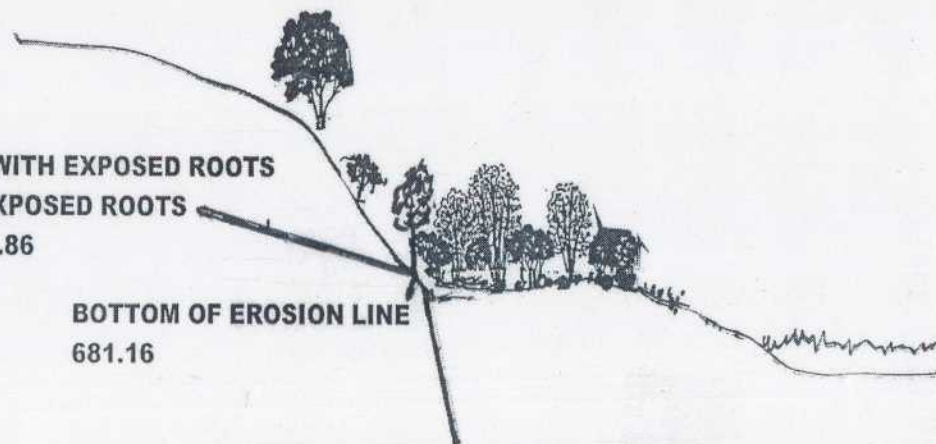
WATER LEVEL 676.38 @ 2:00 PM

JULY 13, 2005

BASE OF TREE WITH EXPOSED ROOTS
ALSO TOP OF EXPOSED ROOTS
ELEVATION 682.86

BOTTOM OF EROSION LINE
681.16

BASE OF EXPOSED ROOTS OF TREE
SAME AS GR BASE AT MIDPOINT OF 4-TRUNK COTTONWOOD
ELEVATION 680.50



JOB Prescott Beach O'HWM Det.
DATE 5-17-2005 PAGE 1

B1	Color	Texture	Description
0-2"	7.5YR 3/2	COS	many med. roots
0-8"	2.5YR 3/4	COS	many fine roots
8-15"	2.5YR 3/4	COS	30% gravelly

Notes:

Boulders & cobbles at surface
Water at 8" deep in boring
B1 location is 2 ft from water line

B2	Color	Texture	Description
0-18"	7.5YR 4/3	COS	Through out: many med roots
18-30"	7.5YR 4/3	COS	gravelly & cobbly

Notes:

2.5' damp
B2 location is 12 ft from water

B3	Color	Texture	Description
0-2"	10YR 2/1	S	w/ decomposing leaves
2-24"	7.5YR 4/3	COS	Boulders (40%) coarse roots 40% gravel and 30% cobble

PARTY CHIEF

WEATHER

Eunice Post
Cloudy 55°F
rained this A.M.



JOB Pres. det Beach O'HWM C.32
DATE 5-17-05 PAGE 2
Notes from Jim Kleinhans & Emily Lund Pierce Co.

OB1	Depth
0-2"	0'
X Tree	-2'
OB2	-12'
OB3	-22'
OB4	-32'

"COS = coarse sand"
"S = sand"

B4	Color	Texture	Description
0-4"	S w/ organic mat.	7.5YR 2.5/1	co. mat.
4-16"	S w/ Boulders	15% Coarse frag.	medium roots 10YR 3/2

9:45 - 11:30 AM

PARTY CHIEF

WEATHER

Eunice Post
Cloudy 55°F rain PM



PLOT PLAN

JOB Prescott Beach OHWM Det.
DATE 5-17-2005 PAGE 3

B5	Color	Texture	Description
0-3"	7.5YR3/2	COS	many coarse roots
3-13"	2.5YR3/4	COS	many medium roots
13-19"	2.5YR3/4	COS	no roots

Notes:

- Boulders and cobbles at surface
- 40% Gravel in each horizon
- 30% Cobble in each horizon
- Water level at 13"
- B5 is 5' from water line

B6

0-13"	2.5YR3/4	COS	many medium roots
13-24"	2.5YR3/4	COS	many fine roots

NOTES

- Boulders (79%) first horizon
- Gravel & Cobble through out (30%)

B7

0-2"	7.5YR3/2	SL	many coarse roots
2-8"	2.5YR4/4	SCL	many fine roots
8-18"	2.5YR3/3	COS	↓

Notes:

Boulder at surface

PARTY CHIEF

WEATHER

Unice Post
Cloudy 55°F

JOB Prescott Beach OHWM Det.
DATE 5-17-2005 PAGE 4

Notes from: Jim Kleinhans & Emily Lund, Pierce Co.

water
m x
B5
B6

B7
organic matter higher
gels deeper
B8

B8

0-3"	10YR3/2 S	Many fine roots
3-16"	10YR3/2 S	no coarse frag.
Boulders Below (16"+)		

Soil only
30% gravel - white

11:30 - 12:30 pm

PARTY CHIEF

WEATHER

Unice Post
Cloudy 55°F sprinkling

Plot Plan



T.01

LOWER ST. CROIX NATIONAL WILD AND SCENIC RIVER
ORDINARY HIGH WATER MARK



Ordinary High-Water Mark

- “By **ordinary high-water mark** is meant the point on the bank or shore up to which the presence and action of the water is so continuous as to leave a distinct mark either by erosion, destruction of terrestrial vegetation, or other easily recognized characteristic.
 - *Diana Shooting Club v. Husting* (1914)

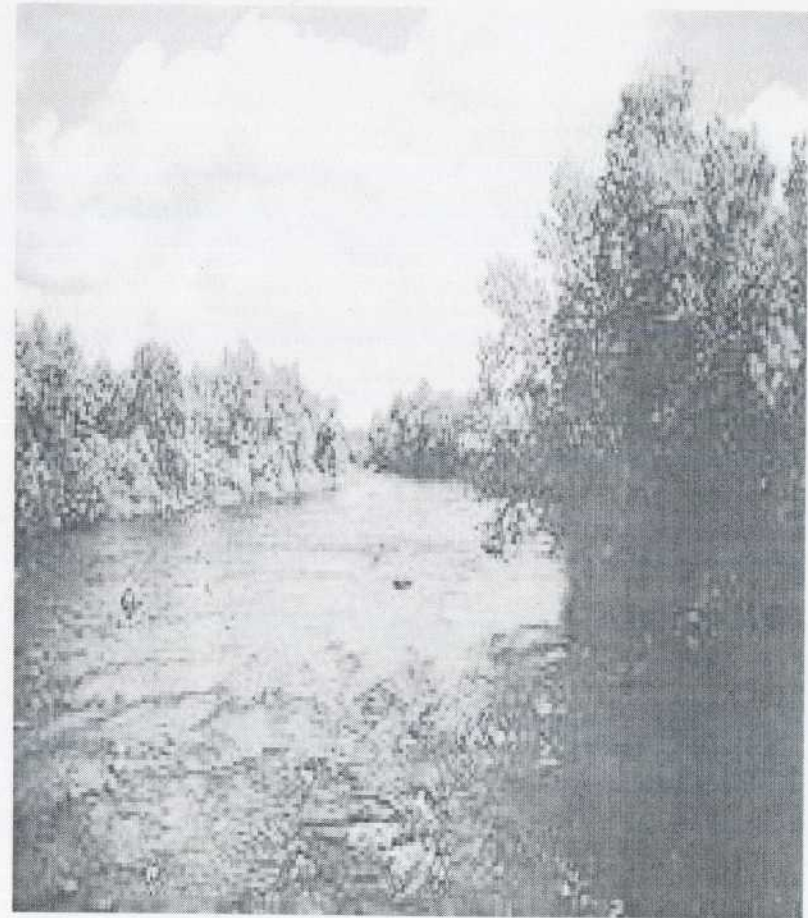
Ordinary High-Water Mark

- ... And where the bank or shore at any particular place is of such a character that it is impossible or difficult to ascertain where the point of ordinary high-water mark is, recourse may be had to other places on the bank or shore of the same stream or lake to determine whether a given stage of water is above or below the ordinary high-water mark.”

The Ordinary High Water Mark

The ordinary high water mark is defined the same for streams as for lakes.

Muench v. PSC, 1952



Identifying the OHWM

- Biological Indicators
 - * multiple trunks on woody vegetation
 - * buttressing of tree trunks
 - * adventitious roots
 - * change in vegetation from aquatic to terrestrial
 - * shallow root systems



TWIN SPRINGS

TRANSECT 1

The biological indicators we found here were one pipe elbow root and multiple tree trunks on several trees

Identifying the OHWM

- Physical Indicators
 - exposed tree roots
 - erosion from waves creating a washmark
 - mud stain or debris line
 - water stains on rocks/culverts/seawalls
 - leachate marks in the soil



TWIN SPRINGS---TRANSECT 2

The erosion line and exposed tree roots are both examples of physical indicators that we look for to find the OHWM.



LAKE MALLALIEU DAM

The water stain on
the dam is an
excellent physical
indicator.



OHWM - biological and physical

SOME
INDICATORS WE
FOUND ON THE
ST CROIX:

Multiple tree
trunks

Exposed roots

Shallow roots

Cobble drift line

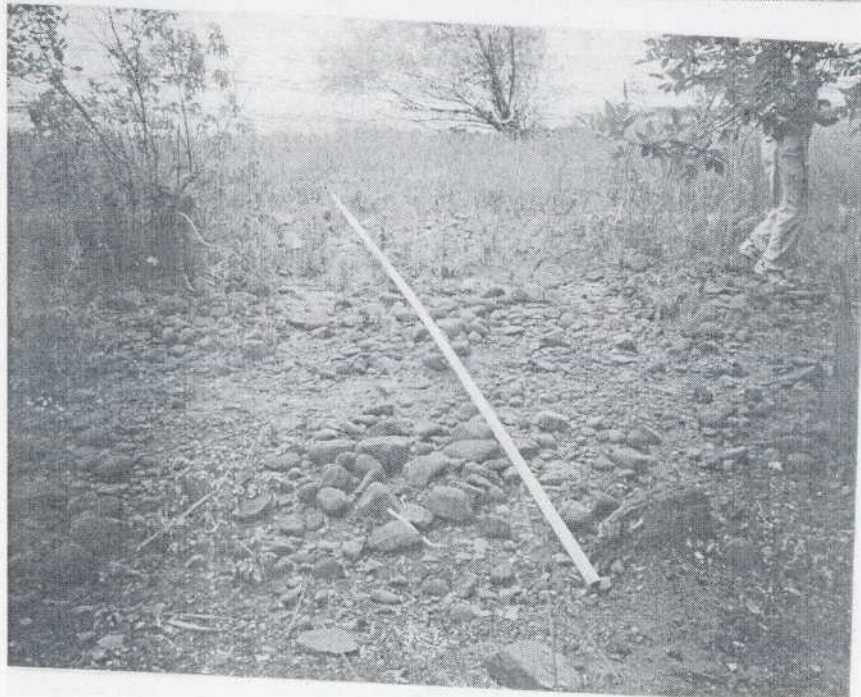
Hydric vegetation



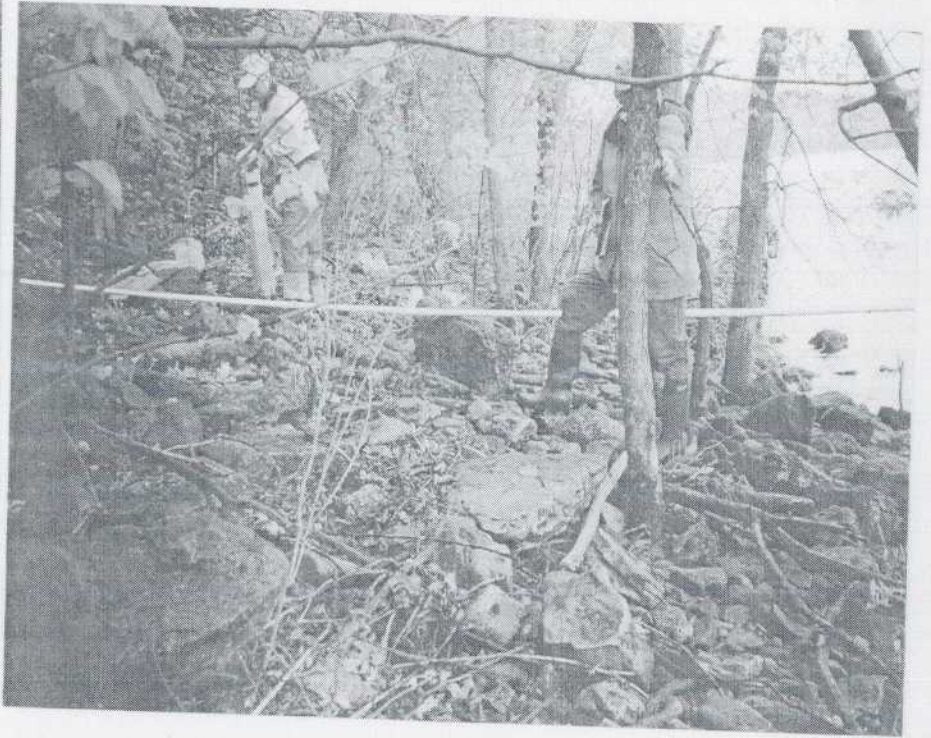
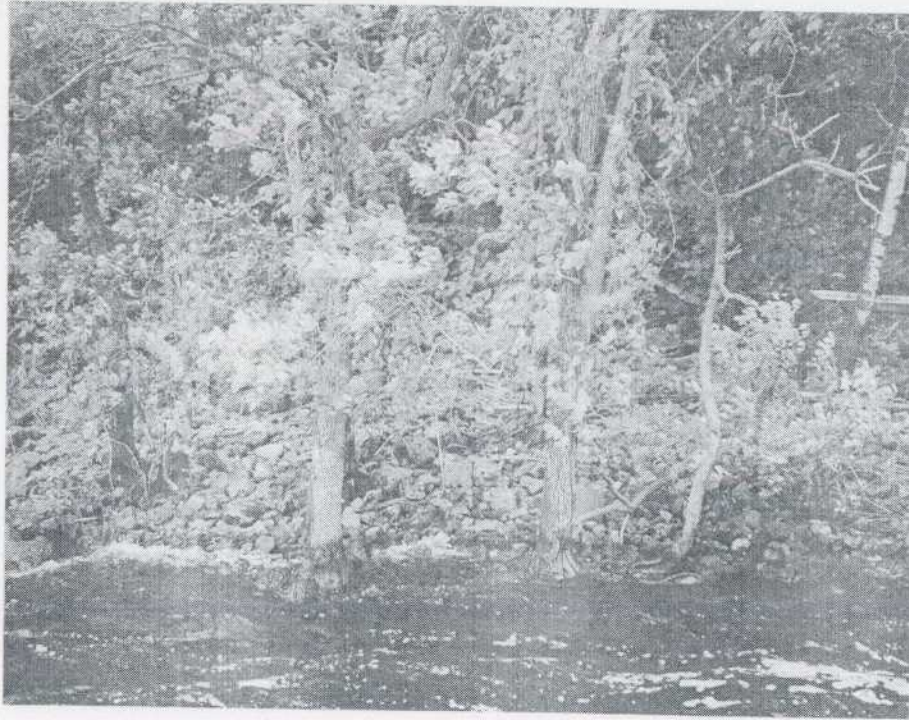


UNION PACIFIC RAILROAD PROPERTY

Notice the multiple tree trunks, shallow root systems and water dependent vegetation-all good biological indicators.



The exposed tree roots and cobble drift lines are good physical indicators.



BOB ROLLE'S PROPERTY---TRANSECT 1

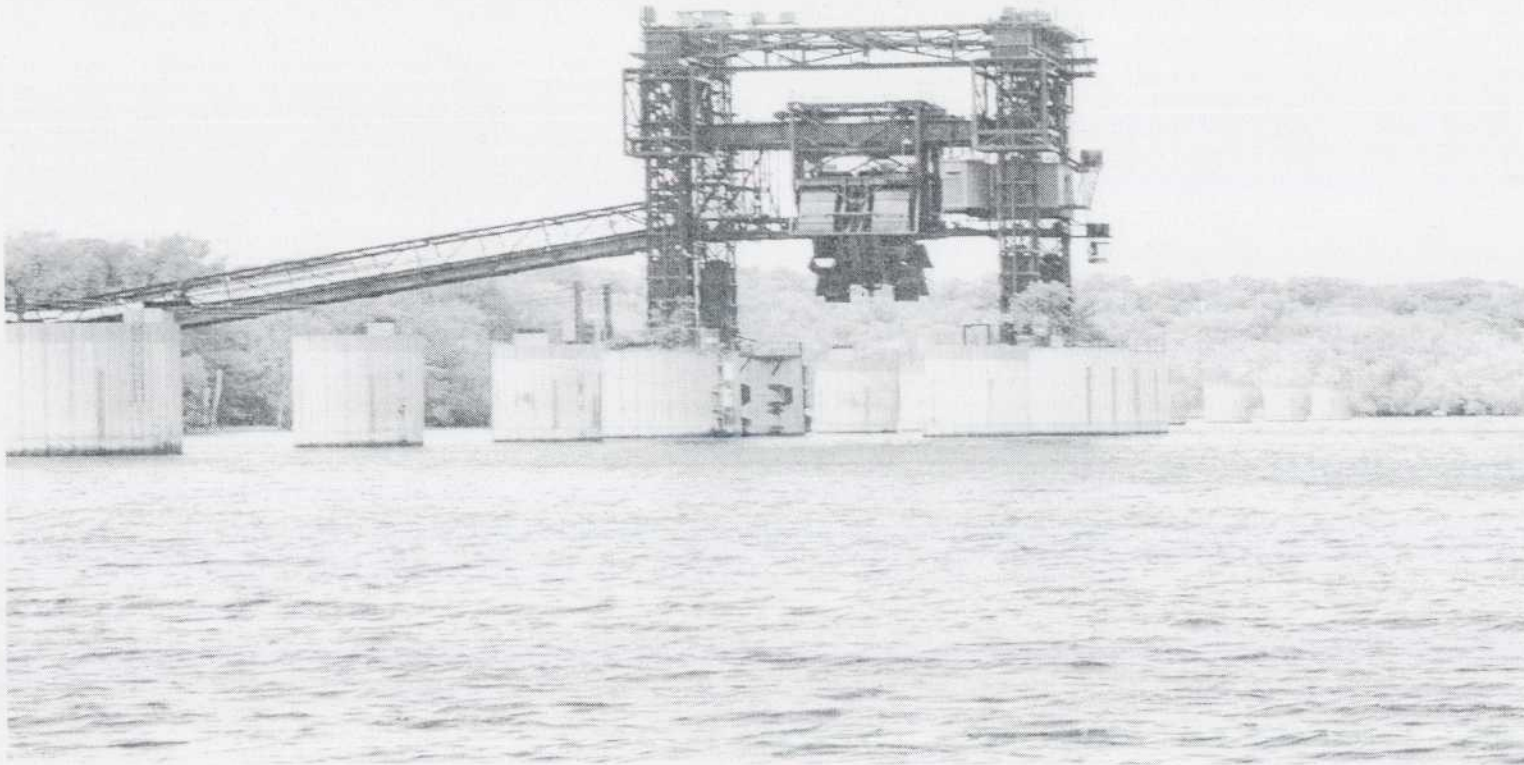
Notice the water stain—Gary Lepak is standing at the top of the light stain and Bob Rolle is standing at the bottom of the light stain—excellent physical indicator

Identifying the OHWM Physical indicators

- Permanence
- Predominance

To find the OHWM, we focused on which indicators which were well established and most pronounced to find an accurate elevation.

This is what we found.....



BARGE DOLPHINS AT THE KING POWER PLANT

The stain line on the dolphins is a good example of both permanent and predominate.

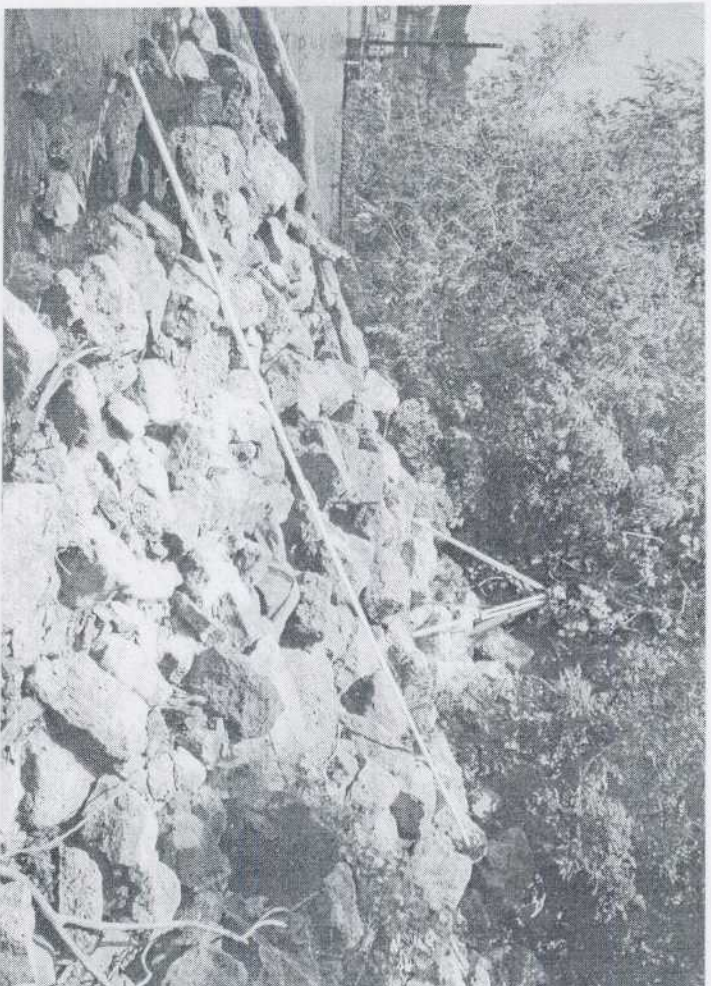
As the indicator is a line, it is accurate as well



KINNICKINNIC PARK PIER AREA

The water stain is shown on both the artificial riprap and on the natural riprap---notice that this is not a break in the stain

THE STILLWATER EARTHEN CAUSEWAY



Same staining pattern—



Elevation of stain is
within 0.1 foot as stated
in Ch. 40 of the
guidebook

Identifying the OHWM Corroborating Data

- Water level records
- Rainfall records
- Time series photography

Why These Sites?

- Equally spaced in the reach of river that we did our field work
- Provided a good sampling of the different types of shoreline in the lower 25 miles of river
- Minimal trespass or access concerns
- Convenient—minimal intrusion onto private lands
- Two sites were requested

The Department did receive other requests for field work, but logistically, we could not conduct the needed field work and meet the August 31 public hearing deadline.

GIVEN THAT...

Water levels of the St Croix have been documented to be at generally 681 for 30 days over a 20-year record,

the presence, the variety of indicator types, and the consistency of the various indicator types, both biological and physical, begin at low control pool of 675 and end in a general range of 681-682,

the permanence and predominance of the water stains found spanning most of the river in the “state zone,” and

the guidebook states that the OHWM is not at the edge of open water adjacent to aquatic vegetation, but on the bank or shore where terrestrial vegetation either begins or is destroyed;

staff offers elevation 681.5, 1912 Adjustment, Corps datum as the ordinary high water mark of the St Croix in the lower 25 miles known as the “state zone.”

THANK YOU!

Since this project began, we have asked for your ongoing participation and input.

We appreciate all of you taking time out of your busy schedules to attend our previous informational meetings, attend this meeting, and all of your work.

Moss

Moss are members of the plant kingdom, but are not vascular plants. This means that moss have no root system for water absorption from the soil and no protective layer on the aerial parts to prevent drying. Therefore mosses must live in moist environments in which they can absorb water through the leafy portions and in environments that do not allow the moss to dry out for extended periods of time (Raven et. al).

Mosses are abundant in moist areas. Some species of mosses can remain alive when dried for a period of several years and revive quickly when moistened, but other mosses are aquatic will live out of water only a day or two before dying. Of course, there are also species intermediate in the length of time they can survive out of water.

However, reproduction of moss requires water, since the male cells must swim through the water to fertilize the egg. So, moss requires at least seasonal inundation to reproduce.

Horticultural texts (Reiley and Shry 1983) indicate that moss growth occurs when there is too much shade and or too much moisture. Remedies of moss growth include reducing shade and tilling low wet areas.

Using mosses as an indicator of water level is problematic. Unless one has a manual of mosses, keying out the species of moss can not be accomplished with botanical manuals. Since mosses are not vascular plants, they are not included in the manuals that I have. If one had a moss key and determined the species of moss, the next step would be to determine its hydric preference. This would require a good moss ecology text. Moss species are not included on plant lists the DNR use for classifying hydric vegetation.

Knowing the species of moss and its ecological requirements are necessary because different species of moss are found across a wide range of habitats. Different species of mosses will tolerate varying periods of dryness and some moss species are found only in habitats with constant inundation. There are two species of moss that we regularly sample on lake beds, totally submerged: *Fontinalis* spp. and *Drepanocladus* spp.. *Sphagnum* spp. are generally found in bog situations in which parts of the moss are constantly in water.

Sources:

H. Reiley and C. Shry. 1983. Introductory Horticulture. Delmar Publishers, Inc.

Peter Raven, Ray Evert and Susan Eichorn. 1986. Biology of Plants. Worth Publishers, Inc. NY, NY.

E.03

Post, Eunice A.

From: Post, Eunice A.
Sent: Wednesday, August 24, 2005 12:28 PM
To: 'Denny Darnold'
Subject: FW: St Croix ordinary high water mark

Denny,

I am resending our earlier email correspondence regarding the 677 elevation you found for the ordinary high water mark in the City of Hudson. I have not received any of the field data yet. Would you please send that so I can include in the record for the ohwm evaluation?

Thanks
Eunice

From: Post, Eunice A.
Sent: Friday, July 22, 2005 3:51 PM
To: 'Denny Darnold'
Subject: RE: St Croix ordinary high water mark

Denny,

Thank you for the additional information. If it is not too much trouble, I have some additional questions.

In 1993, who with DNR advised you to use 676 msl as the ohwm for the office building? Was any field work done at that time to ensure that 676 met the ohwm definition as stated in case law, state statute and administrative code?

For the Nor Lake ohwm identification, what criteria in NR 118 was used? Or did you mean the definition of ohwm that is included in NR 118? If you meant the definition, would you mind sharing your field data, soil samples, vegetation inventory, identification of indicators, etc, that you compiled to make the ohwm determination at this site?

As for DNR having more useful or better information, we are in the process of gathering that as I mentioned before. The public meetings to show what we have gathered thus far are July 27 and 28, which is next week---so I hope to see you there.

For these meetings, Gary Lepak is compiling river level datum, frequency and duration, as documented by the Corps of Engineers gauge in Stillwater, MN.

The DNR also determines ohwm on a case by case basis; however, part of the reason for re-evaluating the ohwm at this time is in respond to the public's request that one specific river level be identified as the ohwm and discontinue the case by case procedure, at least that is how I understand it.

Just so you know, the DNR uses elevation 682 as the ohwm from Prescott upriver to the railroad property immediately south of the Lake Mallalieu dam. At the dam the ohwm changes to 685.75 and that elevation is used upriver to approximately Twin Springs landing.

Thanks again Denny, and I will include our correspondence as part of the ohwm re-evaluation file.

Eunice

08/31/2005

From: Denny Darnold [mailto:ddarnold@ci.hudson.wi.us]
Sent: Friday, July 22, 2005 11:27 AM
To: Post, Eunice A.
Subject: Re: St Croix ordinary high water mark

Eunice,

In 1993 the city of Hudson Board of Appeals reviewed an application for variance to construct a private parking lot at 400 Second Street South for the proposed Grandview Office Building. At that time I was advised by WisDNR to use 676 feet msl as the elevation to require setback from the OHWM. I was particularly careful at that time to include Gary Lepak and Dan Koich in the review of both floodplain and riverway regulations, so that there would be no questions from the city, WisDNR, developer or general public about the compliance with zoning, floodplain and riverway regulations. As recently as a few years ago there was an application from a potential buyer of the Nor-Lake warehouse building and a proposal to establish private parking west of the building. At that time I reviewed the location of the OHWM with Doug Zahler, RLS, S&N Surveying and I indicated to him where I felt the OHWM was located using the criteria established by the NR118. When Doug surveyed the location the elevation was 677 msl based city datum.

If WisDNR has better or more useful information, please provide. I am anxious to see where the WisDNR research conducted for the past year will indicate the OHWM. I believe the biggest concern regarding the OHWM is what is it? I have been very concerned that WisDNR is misinterpreting scarring of the shoreline that has resulted in flood conditions as criteria for determining OHWM. In my experience the water has never rose above the low elevation of South Front Street except for rising river conditions due to floods. The low spot of the South Front Street is 684.9 msl.

In June 25, 2002 the elevation of the river prior to rising river conditions due to heavy rainfalls was 678.3 msl, June 24, 2003 - 675.8 and June 28, 2004 - 677.7 msl. I have always felt and substantiated by WisDNR opinion of 1993 that the ordinary high water mark is approximately 677 msl.

In my information given to Chris Anderson (Anderson forwarded to Francis Ogden) at his request was that the city does not have a set elevation for OHWM and is determined on a case to case basis based on the criteria identified in NR118, but that my experience the OHWM is generally about 677 msl, give or take one-half foot.

Denny Darnold

----- Original Message -----

From: Post, Eunice A.
To: ddarnold@ci.hudson.wi.us
Sent: Thursday, July 21, 2005 4:14 PM
Subject: St Croix ordinary high water mark

Denny,

I attended a plan commission meeting in North Hudson last night. At the meeting Francis Ogden presented a letter from you, dated July 14, 2005, which stated that you generally use elevation 677 as the ordinary high water mark in Hudson.

As you probably know, the DNR is currently in the process of re-evaluating the ordinary high water marks set by Dan Koich and Ed Bourget. We held public meetings last winter to gather relevant information and present the field data we had collected thus far. We specifically asked for ordinary high water mark elevations as set by other agencies.

Would you please send me your field data, photos, field investigation reports or any information documenting your determination of the 677 ordinary high water mark so it can be included with the other ordinary high water mark information?

Thanks
Eunice

E.04

Post, Eunice A.

From: Molly Shodeen [molly.shodeen@dnr.state.mn.us]
Sent: Tuesday, August 30, 2005 3:42 PM
To: Dale Homuth; Glen Yakel; Kent Lokkesmoe; Scot Johnson; Post, Eunice A.; Baczynski, Robert J.
Subject: Final Wi OHW letter for Hearing
Attachments: Wi OHW2-ltr.doc



Wi OHW2-ltr.doc
(30 KB)

This is what I will read into the hearing record.

August 31, 2005

Mr. B. Dale Simon
101 South Webster
FH/6
Madison, WI 53707

RE: St. Croix Ordinary High Water Mark Determination

Dear Mr. Simon:

You will hear many references to Minnesota's Ordinary High Water Elevation (OHW) in relation to the St. Croix, so I would like the record to reflect some of differences and challenges on how the two states apply and determine OHW for regulatory purposes.

Minnesota's definition of OHW is statutory (103G.005 Subd 14) and reads like this: Ordinary high water level means the boundary of waterbasins, watercourses, public waters and public waters wetlands, and:

- (1) the ordinary high water level is an elevation delineating the highest water level that has been maintained for a sufficient period of time to leave evidence upon the landscape commonly the point where the natural vegetation changes from predominately aquatic to predominately terrestrial;
- (2) for watercourses, the ordinary high water level is the elevation of the top of the bank of the channel;
- (3) for reservoirs and flowages, the ordinary high water level is the operating elevation of the normal summer pool.

Waterbasin is defined as an enclosed natural depression with definable banks. There are no definitions for watercourse, reservoir or flowage in statute or rule. Over the last 10 years, Minnesota DNR has been studying the application of our OHW definition on the Mississippi River system. The Mississippi system is a series of lock and dams, which creates pools. Similar to watercourse, reservoir and flowage, there is no definition of pool in statute or rule. The Mississippi pools do not function and are not operated like named reservoirs in other parts of our state such as the Leech Lake, Winnibigoshish, Red Lake, Big Sandy, etc.

Lake St. Croix existed as a wide spot in the river just like Lake Pepin on the Mississippi prior to lock and dam construction. It has some lake characteristics, but also has undeniable riverine characteristics such as flow and recurrent flooding. Bulletin 25, An Inventory of Minnesota Lakes, published in 1968, describes Pepin as being formed by sediments deposited by the Chippewa River which caused partial damming. Likewise, it describes the St. Croix as

Since the pools on the Mississippi do not meet common definitions for reservoir or flowage, we have decided that previous attempts to use a "normal summer pool" definition, which did not have scientific evidence indicates that these river reaches should be treated as watercourses, and that the OHW would be the top of the bank of the channel in accordance with our statutory definition.

A literature search done by our staff found several studies that indicated that the top of the bank of most watercourses would correlate to a 1.5 to 2 year flood level. Thanks to the recent Corps of Engineers flood study work on the Mississippi River, accurate discharge estimates are available and HEC 2 and HECRAS flood models can be used to estimate a 2-year flood elevation at any point on the Mississippi River downstream of the Twin Cities. Therefore, for the past five years or so, we have been using these 2-year flood elevations as an estimate of the OHW (top of bank) for the upper pools of Mississippi in MNDNR Region 3.

The St. Croix is impacted by Mississippi Pool 3, which is created by US Lock and Dam 3 in Red Wing. The elevation we use for the Mississippi for OHW estimates at the confluence of the St. Croix is 679.52 using the 2-year flood elevation. This elevation also correlates with field investigations by our state survey crew who examined tree evidence using our lake OHW methodology. They found consistent physical evidence between 679 and 682 and even higher in some places. For permits to alter the bed of public waters, the MNDNR now uses 679.5' as an estimate of the OHW for the St. Croix south of Stillwater, and continue to use top of bank north of Stillwater.

We could make an on-site determination of the OHW on a case-by-case basis, which is very time consuming and would then require surveying in the mark. Instead, we have decided to rely on an OHW elevation estimate that is based on hydrology/hydraulics modeling and physical evidence. Minnesota believes that the elevations that have been developed over the last 10 years represent an accurate estimate of OHW based on our statutory definitions for these river systems and we are using them with confidence. The application of the location of the OHW for setback purposes is a separate issue that has always been handled by the local units of government, as they interpret and administer their St. Croix Ordinances. We do not anticipate any changes in this procedure under the current regulations. As always, local units of government may choose to be more restrictive.

Deleted: 1

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ST. CROIX COUNTY WISCONSIN

ZONING OFFICE

ST. CROIX COUNTY GOVERNMENT CENTER

1101 Carmichael Road

Hudson, WI 54016-7710

(715) 386-4680 • Fax (715) 386-4686

St. Croix County Land Use Permit Application

This application is to be used for projects that require or qualify for a St. Croix County land use permit.

Property owner: WILLIAM L. TILTON

Contractor/Agent (if not owner:) _____

Mailing address: 101 E. FIFTH ST., STE 2220
ST. PAUL, MN 55101

Mailing address: _____

Daytime phone: (651) 224-7687

Daytime phone: () _____

SITE INFORMATION

Property location: 1/4, SE 1/4, Sec. 12, T. 28 N., R. 20 W., Town of TROY

Site address: 278 WEST GROVE ROAD, HUDSON, WISCONSIN 54016

Computer #: 040 - 1144 - 80 - 000

Parcel #: 12 - 28 - 20 - 575A

ZONING INFORMATION

Zoning District: (Check One) () AG. () AG. II () AG. RES. (☒ RESIDENTIAL () COMMERCIAL () INDUSTRIAL

Overlay District: (If applicable) (☒ SHORELAND (☒ RIVERWAY (☒ FLOODPLAIN

Type of Land Use Permit Request: (Check One)

- () Animal Waste Storage Facility
- () Signage
- () Nonmetallic Mining Operation
- () Floodplain

- () Wireless Communication Service Facility (co-location)
- () Lower St. Croix Riverway District (Zoning Compliance)
- () Shoreland
- () Other _____

Be sure to obtain a copy of pertinent St. Croix County Zoning Ordinance sections that apply to your request.

Rev. 8/21/03

GENERAL APPLICATION REQUIREMENTS

Applications will not be accepted until the applicant has met with department staff to review the request to determine if additional information is needed.

It is important to **note** that some information may be waived by the Zoning Department following review of the plans and/or a site visit by staff.

- ☒ A general written statement that specifically identifies the request.
- ☒ A statement indicating whether or not a private water or sewage system is to be installed.

☒ SITE DEVELOPMENT PLAN

A complete site plan showing at a minimum the location of the following:

- Identify all slopes of 20% and greater.
- (Riverway) Identify all blufflines (any slopes 12% or greater) and show setbacks from blufflines,
- Lot dimensions – total area,
- Location of any structures with distances measured from the lot lines and centerline of all abutting streets or highways,
- Location of any existing or proposed on-site septic system or private water supply systems,
- Location of the ordinary high water mark (OHWM) of any abutting navigable waterways and show all setbacks from the OHWM.
- Location and landward limit of all wetlands, specifications and dimensions for areas of proposed wetland alteration.
- Existing and proposed topographic and drainage features and vegetative cover,
- Location of floodplain and floodway limits on the property as determined from the County floodplain zoning maps
- Location of existing access roads, and recorded easements,
- Any other unique limiting condition of the property

GRADING INFORMATION

For projects that involve land disturbance requests the following information may be required:

- ☐ Detailed Drawings (scale should not be greater than 1 inch to 200 feet)
- ☐ Grading Plans (Pre and Post Contours)
- ☐ Project Schedule
- ☐ Erosion Control Plans (Best Management Practices)
- ☐ Storm water Management Plan stamped by an engineer and including all calculations
- ☐ Vegetation Plan (Seeding rates and species type)
- ☐ Landscaping (Screening) Plan (Include the species, size and location)
- ☐ Other documents _____

SIGNATURE

By signing the application, the applicant is stating the application materials are true and correct, and allows the zoning staff the right to conduct a site visit of the property. Providing incorrect information may cause a delay in the permit process and/or denial.

Signature of owner: _____

Date: _____

10/29/04

If approved, the Land Use Permit shall be valid for one to two years from the date of permit issuance, depending on which Ordinance the permit is granted approval. The applicant may also be required to apply through the Town for a local building permit.

COUNTY USE ONLY

Application accepted and complete: _____

By: _____

Zoning Compliance: _____

Non-Compliance: _____

Fee paid: ____/____/____

Permit Number: _____

➤ The application materials will remain on file in the Zoning Department.

LAND USE PERMIT FEE SCHEDULE

Sign	\$150.00
Temporary Occupancy	\$150.00
Rip Rap	\$150.00
St. Croix River Valley District	\$150.00
All Others	\$150.00
Non-Metallic Mining	\$200.00
Towers	\$200.00
Animal Waste Storage Facility	\$200.00

FREQUENTLY USED CONTACT INFORMATION

- **St. Croix County Highway Department**
 Jeff Durkee, Highway Engineer 715-796-2227 hwype@scchwy.org
 Brian Halling (Surveyor) 715-796-2227
- **St. Croix County Land & Water Conservation Department**
 Pete Kling - Land Specialist – Urban 715-684-2874 ext. 131 pkling@co.saint-croix.wi.us
 Steve Olson - Land Specialist – Rural 715-684-2874 ext. 135 steveo@co.saint-croix.wi.us
- **Wisconsin Department of Transportation (District 6)**
 Diane Schermann, Access Coordinator 715-836-3905 dianeschermann@dot.state.wi.us
- **Wisconsin Department of Natural Resources**
 Eunice Post - Water and Zoning 715-684-2914 poste@dnr.state.wi.us
 Jim Devlin - Wastewater Specialist 715-684-2914 James.Devlin@dnr.state.wi.us
- **U.S. Army Corp of Engineers**
 Daniel Seemon, Ecologist 651-290-5380 daniel.j.seemon@usace.army.mil
- **Wisconsin Department of Commerce**
 Nicholas Charles - Comm. Building Insp. 608-789-5657 ncharles@commerce.state.wi.us

In short, this scientific data also supports the conclusion that your property is clearly in a flood-fringe area, not in a floodway area.

(2). ORDINARY HIGH WATER MARK (OHWM) DETERMINATION

For the reasons described below, I have determined that the true Ordinary High Water Mark (OHWM) for your property in Troy Township should be between 676.0 and 677.0 feet above sea level.

In reaching this conclusion, I have used the above-describe resources and personal investigation plus a review of Chapter 40, "Ordinary High Water Mark," and the Waterway and Wetland Handbook (State of Wisconsin). I have used Chapter 40 as a guideline for interpreting the following definition of Ordinary High Water Mark:

The point on the bank or shore up to which the presence and action of surface water is so continuous as to leave a distinctive mark, such as by erosion, destruction or prevention of terrestrial vegetation, predominance of aquatic vegetation, or other easily recognized characteristic.

Chapter 40 of the Wisconsin Waterway and Wetland Handbook, above-referenced, provides guidance for a field determination of the OHWM, including biological and physical indicators. From my personal examination of your property on October 18, 2004, I determined that there was inconclusive physical evidence of the OHWM from a few of the Chapter 40 guidelines. For example, the soil was sandy throughout the floodplain area; water staining of rocks and walls was faint and possibly caused by the flooding of 2001; and there were no mud stains or ice scars noted. There was no significant erosion line along the shore.

On the other hand, Chapter 40 mentions several biological indicators of the OHWM. There were several of these apparent on your property. Specifically, there were mosses and trees abundant along your shoreline. According to Chapter 40, "...mosses which are located on exposed rocks, stumps, tree roots, etc., are usually considered terrestrial and the lowermost elevation of these mosses is a good indicator of the OHWM." We surveyed this transition from moss to no-moss at four locations on your property, designated on the attached survey map as "OHW-1," "OHW-3," "OHW-4," and "OHW-5." The elevations of these locations, which were up to 325 feet apart, were within 1.8 feet in elevation of each other. All of these moss/no-moss elevations were between 676.0 and 677.8 above sea level, with an average elevation of 677.0.

According to Chapter 40, tree roots are another biological indicator or guide of the OHWM. It states therein, "The roots of living trees and shrubs along the shoreline will turn up and away from the water. Exposed bases and roots of older trees with roots growing primarily toward the shoreland on a horizontal plane are usually just above the OHWM if no slumpage has occurred."

We surveyed two locations where trees provided an indication of the OHWM. On the enclosed survey map, "OHW-2" marked the lower-most elevation of a line of willow trees along the shore. The ground elevation of the willow trees is 676.3 feet above sea level. In addition, a white oak is located approximately 40 feet from the shoreline. White oak are commonly found

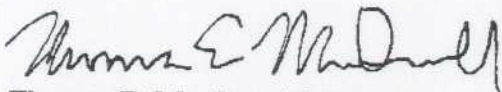
above the OHWM, according to Page 18 of Chapter 40. The ground elevation at the white oak is 679.4 feet above sea level. There are many other mature trees on your property at similar and even lower elevations, including 4 to 5 foot diameter cottonwoods, a 4-inch diameter elm, and several maples.

I have been told that occasionally the Wisconsin DNR has used an OHWM of 686.0 feet above sea level for the St. Croix River in the vicinity of your home. However, according to the hydrologic modeling that we performed, this elevation is only slightly lower than the particular elevation for a 10-year flood. Given the guidance of Page 15 of Chapter 40 ("Ordinary high water marks are generally established by the presence of water at a given elevation for a minimum of 30-70 days a year, over a 20 day period"), clearly the actual OHWM must be lower than a typical one-year flood level. Therefore, it must be far below a predicted 10-year flood level. Therefore, a use of 686.0 feet is a dramatically higher level for the OHWM than that suggested by the Chapter 40 guidelines.

Instead, based upon the above-described analysis, it is my opinion that the Ordinary High Water Mark for your property is between 676.0 and 677.0 feet above sea level.

The opinions expressed in this letter are also based upon my education and experience and are held by me to a reasonable degree of professional certainty. It is my understanding that this letter will be included as supporting your application for a land use permit for flood-proofing and remodeling your home at 278 Westgrove Road. I am available for further discussion of these opinions.

Sincerely,



Thomas E. MacDonald, P.E.
Senior Engineer, Barr Engineering Company

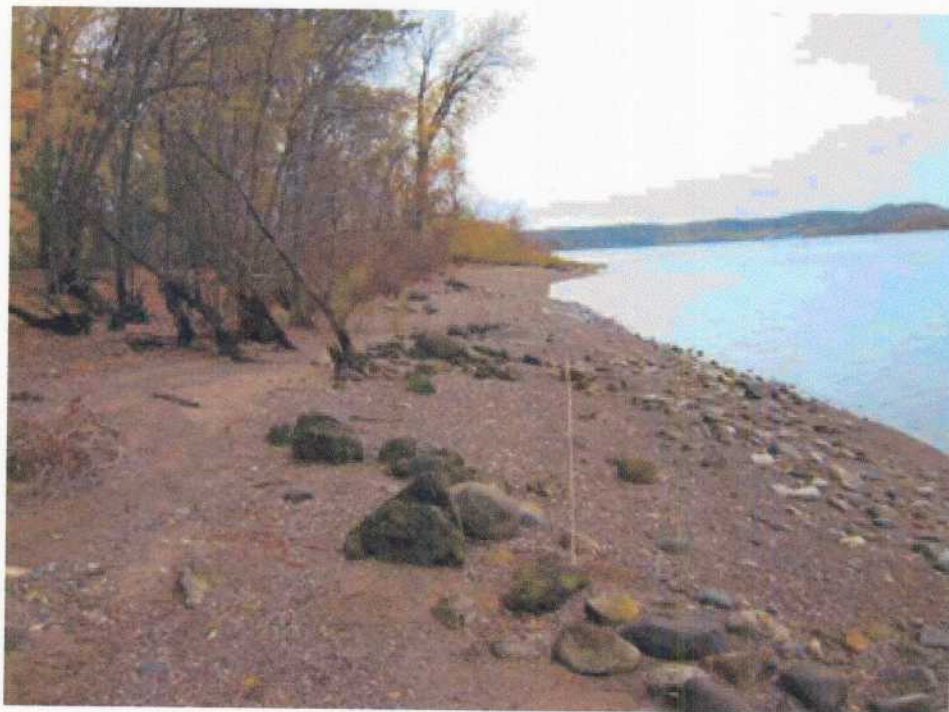
Enclosures











FLOODED AREA OF
AFTON, MINNESOTA

Prepared by

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

for

MINNESOTA DEPARTMENT OF NATURAL RESOURCES

1971

FLOODED AREA OF
AFTON, MINNESOTA

By Lowell C. Guetzkow

This study of Afton, Minn., was made at the request of the Federal Insurance Administration of the Department of Housing and Urban Development by the U.S. Geological Survey. Financing was provided under an interagency agreement by the Department of Housing and Urban Development.

Afton is located on the St. Croix River in Washington County, Minnesota. Afton was first developed on the flood plain of the St. Croix River and later expanded to include the remaining unincorporated part of Afton Township. Although much of the St. Croix River is bordered by steep bluffs, the bluff line is broken at Afton by a small tributary, Valley Branch, which drains much of the village. The area of Afton above the bluff is characterized by steep slopes along Valley Branch and Trout Brook, and by more level areas where surface drainage is into potholes and lakes which have no natural outlet.

Large areas of Afton remain to be developed. The village lies just south of the interstate highway and it is included in the Twin City metropolitan area. It is a prime area for development owing to its nearness to the major population centers, availability of lake-type recreational

activities afforded by the St. Croix River, and scenic areas for residential construction. Urbanization of the undeveloped areas is likely to be fairly rapid in the future.

The St. Croix River empties into the Mississippi River 9 miles downstream from the study area. The river in this area is very wide and deep and is known locally as Lake St. Croix because of its lakelike characteristics. The lower St. Croix River is in the navigation pool formed by the U.S. Corps of Engineers Lock and Dam 3, on the Mississippi River near Red Wing, Minn. During periods of low flow, therefore, the level of the St. Croix River is maintained at or near a normal pool elevation of 675 feet above mean sea level. During periods of high flow, the gates at Lock and Dam 3 are raised, and the effect of the dam on flood flows is negligible.

LL St.
Croix
675
= low

The flood plain of Valley Branch is very wide at the mouth and is only a few feet above the normal pool elevation of the St. Croix River. Therefore, flooding in the lower part of Valley Branch is primarily the result of backwater from the St. Croix River.

Backwater

From the above discussion the flood problems in Afton can logically be separated into three areas: those areas subject to inundation by the St. Croix River; areas within the flood plain of steeply sloping streams, principally Valley Branch; and, those areas adjacent to and subject to inundation from runoff accumulating in lakes and potholes.

This study has been limited to those areas having the greatest flood damage potential and for those areas where local planners have indicated the need for implementation of flood-plain management practices. The flood-plain areas studied for this report are those along the St. Croix River and the lower reaches of Valley Branch and South Fork Valley Branch.

An analysis of the flood characteristics of the lower St. Croix River necessarily involves a study of the peak flows on the Mississippi River at Prescott, Wis. Prescott is located at the confluence of the Mississippi and St. Croix Rivers, where streamflow records have been collected by the Geological Survey since 1928. The lower St. Croix River channel has a large capacity to carry flood flows generated from its own watershed. Foreseeable urbanization in the watershed will not significantly affect flood flows of the St. Croix River. The major flood problem stems from the backwater effect from the Mississippi River. This can be illustrated by the fact that the largest flood of record (1902-71) on the upper St. Croix River resulted in only the fifth highest flood (in terms of elevation) on the lower St. Croix River.

The highest flood elevation recorded at Afton occurred during April 1965, when the flood stage reached 693.0 feet above mean sea level, datum of 1929. At its peak, the St. Croix River contributed 19 percent of the flow in the

Mississippi River immediately downstream from Prescott.

A flood-frequency analysis of the gaging station records for the Mississippi River at Prescott, Wis., was made in accordance with the recommendations of the Water Resources Council Bulletin 15. This analysis indicated that a good fit to the data could be obtained through use of a log-normal distribution. The discharge of 218,000 cubic feet per second at the 100-year recurrence interval, as determined by the Geological Survey, is in close agreement with a Corps of Engineers analysis, which was used to develop a 100-year flood profile for the Mississippi River. This profile has been adopted as the regional (100-year) flood by the Wisconsin and Minnesota Departments of Natural Resources.

At the peak flow of 218,000 cubic feet per second, the stage-discharge-relation curve for the Geological Survey gaging station at Prescott indicates an elevation of 692.0 feet above mean sea level, datum of 1929.

From this established profile point at the confluence of the Mississippi and St. Croix Rivers, the 100-year flood profile was extended up the St. Croix River, based on a comparison with historic profiles. Slopes are extremely flat through this reach, which greatly minimizes errors in shaping the profile. This profile represents the regional flood, as defined by the "Statewide Standards and Criteria for Management of Flood Plain Areas of Minnesota." By a similar analysis, a profile was developed for the 500-year

flood, as shown on the accompanying figure "Flood Frequency Profiles of St. Croix River at Afton, Minnesota."

Profile elevations for the 100-year flood range from 692.5 feet above mean sea level, datum of 1929, at the north city limits to 692.3 feet at the south city limits. The 1965 flood stage on the St. Croix River was approximately half a foot higher through the study reach.

Valley Branch is an ungaged small stream which necessitated a flood-frequency analysis based upon records from similar watersheds and use of regionalization techniques. In addition, consideration was given to the effect of development on peak flows. From the analysis, the required flood-frequency discharges were determined for appropriate points along the stream within the study reach. The 100-year flood discharges for the Valley Branch watershed are as follows:

Valley Branch at mouth	4,500 cfs
Valley Branch above South Fork	1,800 cfs
Valley Branch above tributary entering at cross-section 57	200 cfs
South Fork Valley Branch	4,000 cfs

No historical flood-profile data existed for Valley Branch. Therefore, it was necessary to produce theoretical profiles which were obtained from a digital computer model utilizing a step-backwater program. A total of 65 cross-sections along Valley Branch and South Fork of Valley Branch

were used in the step-backwater computations. These sections were located so as to evaluate normal channel losses and the effects of man-made structures, such as dams, roadways, bridges, etc., located within the flood plain. Profiles for the 100-year and 500-year floods are shown on the accompanying figures "Flood Frequency Profiles of Valley Branch at Afton, Minnesota" and "Flood Frequency Profiles of South Fork Valley Branch at Afton, Minnesota."

Using the 100-year and 500-year flood elevations derived from the profiles, the outlines for the respective floods were transferred by photogrammetric techniques to maps prepared for the study. The areas that would be inundated are shown on the three maps titled, "Flooded Area Map of Afton, Minnesota."

An emergency dike was constructed by the Corps of Engineers along the St. Croix River adjacent to the railroad. The dike was not intended as a permanent structure and is not certified by the Corps of Engineers as being adequate. Therefore, inundated areas have been outlined disregarding the existing dike.

Representative cross sections were obtained in the St. Croix River through the study reach. These cross sections indicate that the conveyance of the main channel is so large, with respect to the overbank conveyance at the elevation corresponding to the 100-year flood, that complete on-land encroachment would cause less than 0.1 foot of backwater.

The on-land conveyance is considerably less than one percent of the total conveyance at the 100-year flood level. Therefore, floodway limits along the St. Croix River could be drawn at the natural shoreline (normal pool elevation, 675 feet above sea level) with no significant backwater effect. *

River miles, as used in this study, were taken from "Upper Mississippi River Navigation Charts, 1968," which are available from the St. Paul District, Corps of Engineers.



HEC-RAS River: St. Croix Reach: Hudson to Afton

Reach	River Sta	Profile	Plan	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Hudson to Afton	1	100-yr	Ppsd Conds	61000.00	605.00	691.50	611.88	691.50	0.000001	0.42	148974.10	3495.50	0.01
Hudson to Afton	1	100-yr	Eff FW	61000.00	605.00	691.50	611.88	691.50	0.000001	0.42	148974.10	3495.50	0.01
Hudson to Afton	1	100-yr FW	Ppsd Conds	61000.00	605.00	691.50	611.88	691.50	0.000001	0.42	144795.00	2830.00	0.01
Hudson to Afton	1	100-yr FW	Eff FW	61000.00	605.00	691.50	611.88	691.50	0.000001	0.42	144795.00	2830.00	0.01
Hudson to Afton	2	100-yr	Ppsd Conds	61000.00	655.00	691.49		691.51	0.000018	1.13	66204.25	3902.30	0.04
Hudson to Afton	2	100-yr	Eff FW	61000.00	655.00	691.49		691.51	0.000018	1.13	66204.25	3902.30	0.04
Hudson to Afton	2	100-yr FW	Ppsd Conds	61000.00	655.00	691.49		691.51	0.000018	1.14	62787.38	3330.00	0.04
Hudson to Afton	2	100-yr FW	Eff FW	61000.00	655.00	691.49		691.51	0.000018	1.14	62787.38	3330.00	0.04
Hudson to Afton	3	100-yr	Ppsd Conds	61000.00	630.00	691.52		691.52	0.000001	0.32	198746.30	7419.10	0.01
Hudson to Afton	3	100-yr	Eff FW	61000.00	630.00	691.52		691.52	0.000001	0.32	198746.30	7419.10	0.01
Hudson to Afton	3	100-yr FW	Ppsd Conds	61000.00	630.00	691.52		691.52	0.000001	0.32	192117.10	3900.00	0.01
Hudson to Afton	3	100-yr FW	Eff FW	61000.00	630.00	691.52		691.52	0.000001	0.32	192117.10	3900.00	0.01
Hudson to Afton	4	100-yr	Ppsd Conds	61000.00	625.00	691.52		691.52	0.000001	0.39	163049.90	4697.10	0.01
Hudson to Afton	4	100-yr	Eff FW	61000.00	625.00	691.52		691.52	0.000001	0.39	163049.90	4697.10	0.01
Hudson to Afton	4	100-yr FW	Ppsd Conds	61000.00	625.00	691.52		691.52	0.000001	0.39	157715.20	2875.00	0.01
Hudson to Afton	4	100-yr FW	Eff FW	61000.00	625.00	691.52		691.52	0.000001	0.39	157715.20	2875.00	0.01
Hudson to Afton	5	100-yr	Ppsd Conds	61000.00	625.00	691.52		691.52	0.000000	0.27	226412.30	4576.46	0.01
Hudson to Afton	5	100-yr	Eff FW	61000.00	625.00	691.52		691.52	0.000000	0.27	227439.00	4584.89	0.01
Hudson to Afton	5	100-yr FW	Ppsd Conds	61000.00	625.00	691.52		691.52	0.000000	0.27	225697.90	4150.00	0.01
Hudson to Afton	5	100-yr FW	Eff FW	61000.00	625.00	691.52		691.52	0.000000	0.27	225697.90	4150.00	0.01
Hudson to Afton	6	100-yr	Ppsd Conds	61000.00	625.00	691.52		691.52	0.000000	0.16	377766.90	7469.73	0.00
Hudson to Afton	6	100-yr	Eff FW	61000.00	625.00	691.52		691.52	0.000000	0.16	377766.90	7469.73	0.00
Hudson to Afton	6	100-yr FW	Ppsd Conds	61000.00	625.00	691.52		691.52	0.000000	0.16	377454.70	7415.00	0.00
Hudson to Afton	6	100-yr FW	Eff FW	61000.00	625.00	691.52		691.52	0.000000	0.16	377454.70	7415.00	0.00

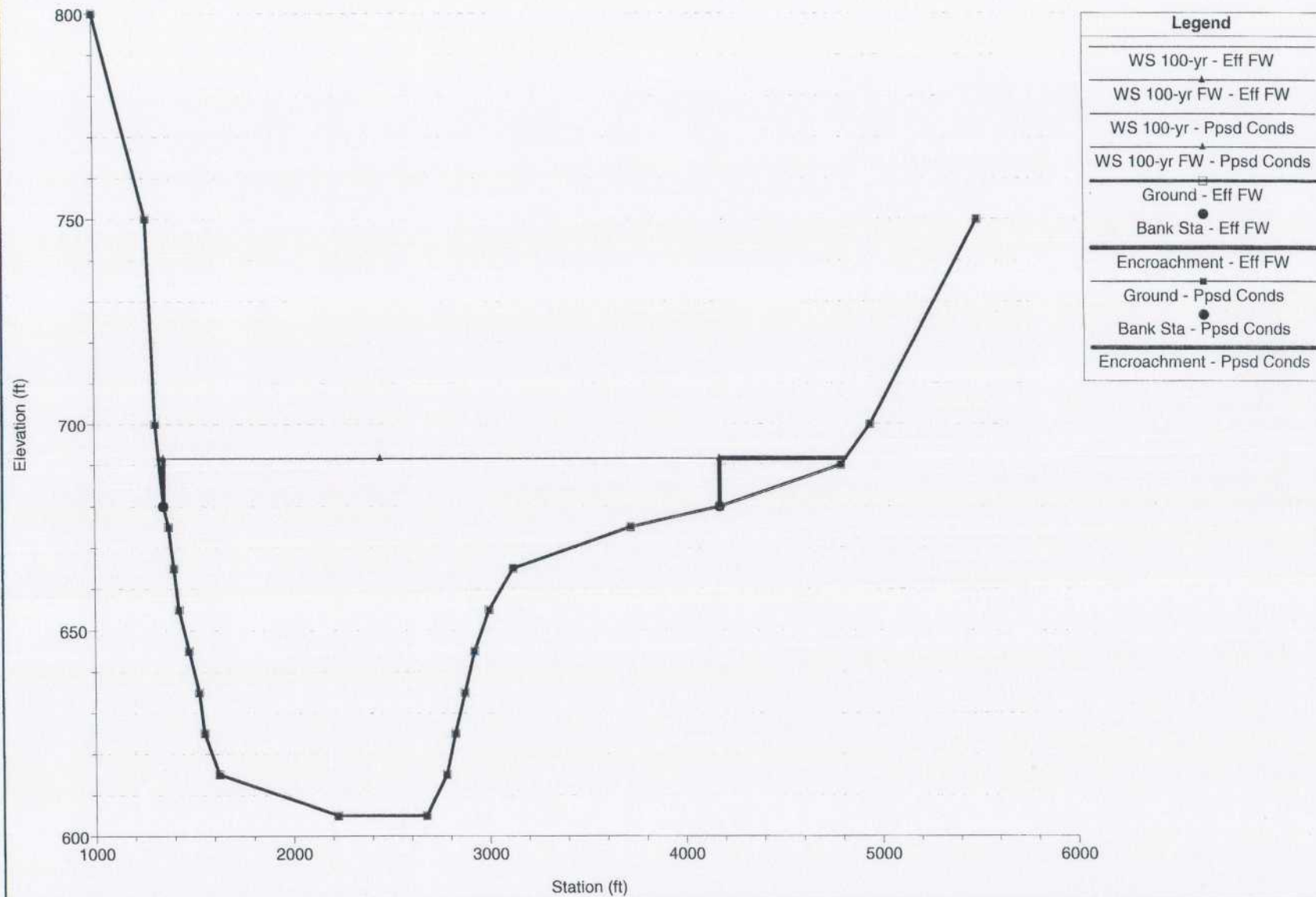
WATER SURFACE
ELEVATION

Energy Grade Line
(hydraulic head)

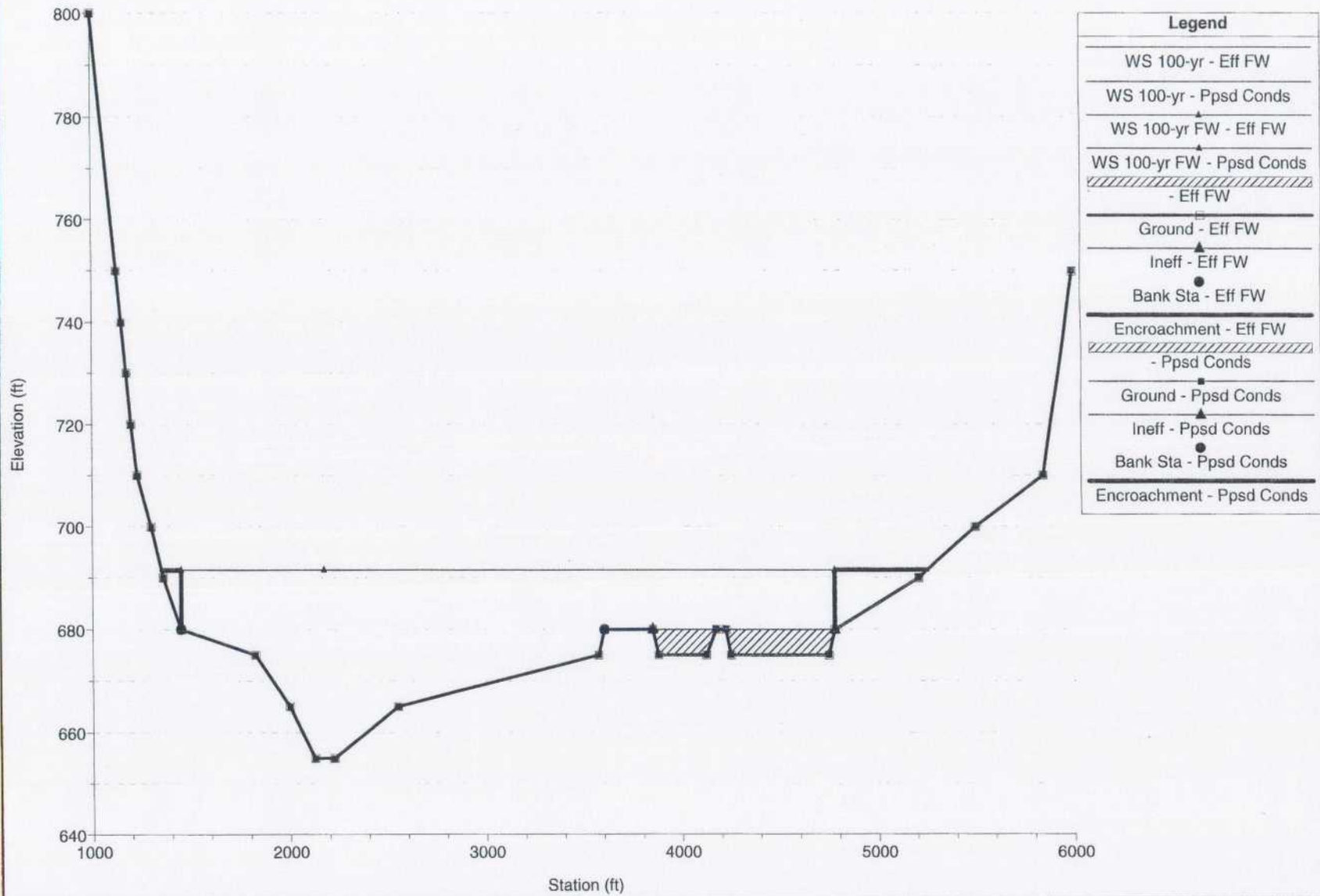
HEC-RAS Plan: Eff Nat River St. Croix Reach: Hudson to Afton

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Hudson to Afton	1	10-yr	39300.00	605.00	686.70	610.34	686.70	0.000000	0.30	132647.50	3258.80	0.01
Hudson to Afton	1	50-yr	53800.00	605.00	689.80	611.40	689.80	0.000001	0.38	143057.30	3457.20	0.01
Hudson to Afton	1	100-yr	61000.00	605.00	691.50	611.88	691.50	0.000001	0.42	148974.10	3495.50	0.01
Hudson to Afton	1	500-yr	77000.00	605.00	694.50	612.84	694.50	0.000001	0.50	159537.10	3546.50	0.01
Hudson to Afton	2	10-yr	39300.00	655.00	686.69		686.71	0.000018	0.96	47971.15	3678.13	0.04
Hudson to Afton	2	50-yr	53800.00	655.00	689.79		689.81	0.000019	1.09	59620.76	3839.29	0.04
Hudson to Afton	2	100-yr	61000.00	655.00	691.49		691.51	0.000018	1.13	66204.25	3902.30	0.04
Hudson to Afton	2	500-yr	77000.00	655.00	694.49		694.52	0.000018	1.23	78068.15	4007.29	0.04
Hudson to Afton	3	10-yr	39300.00	630.00	686.71		686.71	0.000000	0.23	173959.90	4074.50	0.01
Hudson to Afton	3	50-yr	53800.00	630.00	689.82		689.82	0.000000	0.29	186732.40	4155.20	0.01
Hudson to Afton	3	100-yr	61000.00	630.00	691.52		691.52	0.000001	0.32	198746.30	7419.10	0.01
Hudson to Afton	3	500-yr	77000.00	630.00	694.52		694.52	0.000001	0.37	221058.30	7437.12	0.01
Hudson to Afton	4	10-yr	39300.00	625.00	686.71		686.71	0.000000	0.27	145465.90	3167.46	0.01
Hudson to Afton	4	50-yr	53800.00	625.00	689.82		689.82	0.000001	0.35	155383.00	3221.79	0.01
Hudson to Afton	4	100-yr	61000.00	625.00	691.52		691.52	0.000001	0.39	163049.90	4697.10	0.01
Hudson to Afton	4	500-yr	77000.00	625.00	694.52		694.53	0.000001	0.46	177374.20	4839.79	0.01
Hudson to Afton	5	10-yr	39300.00	625.00	686.71		686.71	0.000000	0.19	206127.80	4315.90	0.00
Hudson to Afton	5	50-yr	53800.00	625.00	689.82		689.82	0.000000	0.25	219767.70	4442.28	0.01
Hudson to Afton	5	100-yr	61000.00	625.00	691.52		691.52	0.000000	0.27	227439.00	4584.89	0.01
Hudson to Afton	5	500-yr	77000.00	625.00	694.53		694.53	0.000000	0.32	241629.50	4859.02	0.01
Hudson to Afton	6	10-yr	39300.00	625.00	686.71		686.71	0.000000	0.11	341907.40	7446.89	0.00
Hudson to Afton	6	50-yr	53800.00	625.00	689.82		689.82	0.000000	0.15	365058.20	7461.85	0.00
Hudson to Afton	6	100-yr	61000.00	625.00	691.52		691.52	0.000000	0.16	377766.90	7469.73	0.00
Hudson to Afton	6	500-yr	77000.00	625.00	694.53		694.53	0.000000	0.19	400239.40	7484.01	0.00

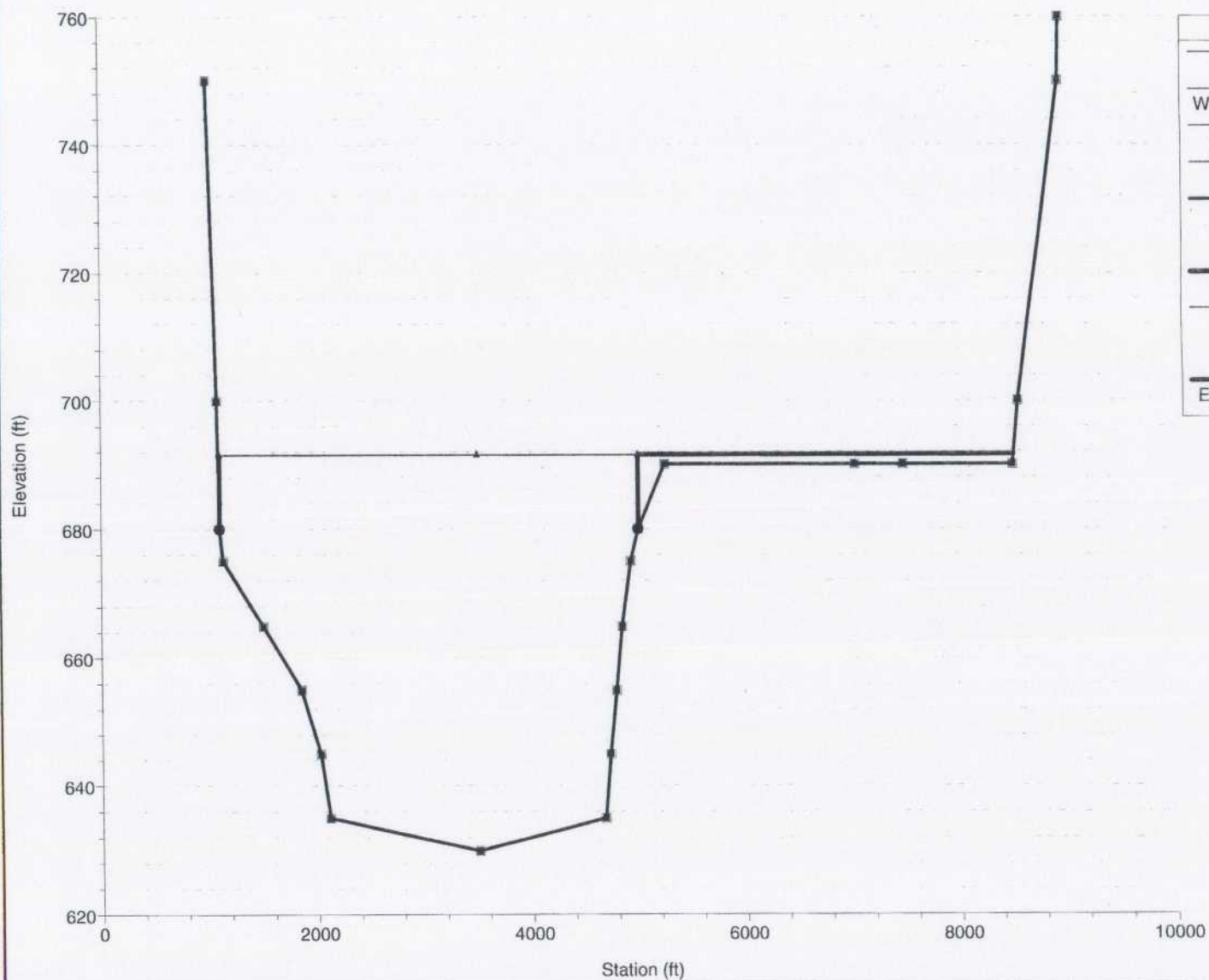
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RS = 1



Geom: Proposed
RS = 2

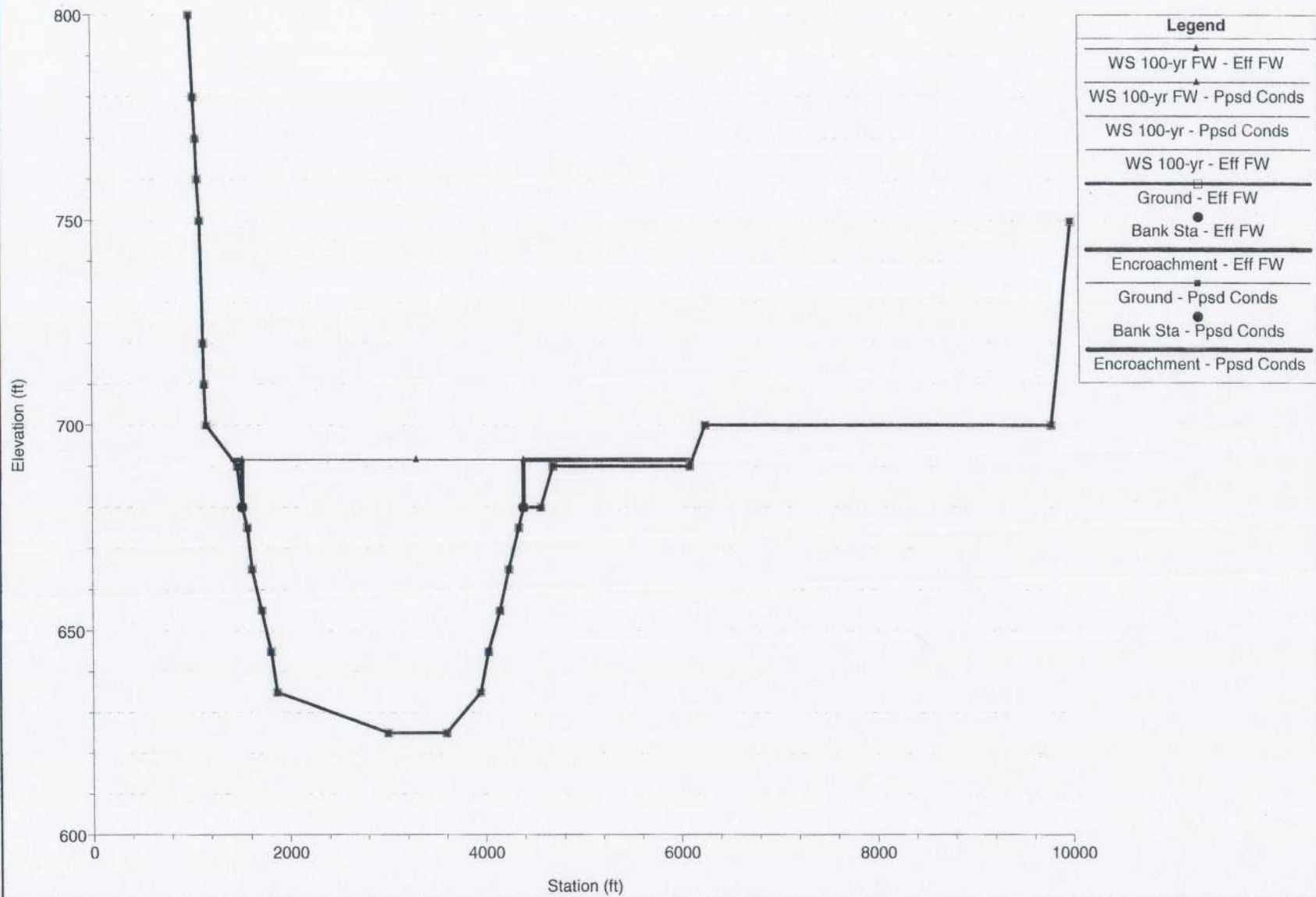


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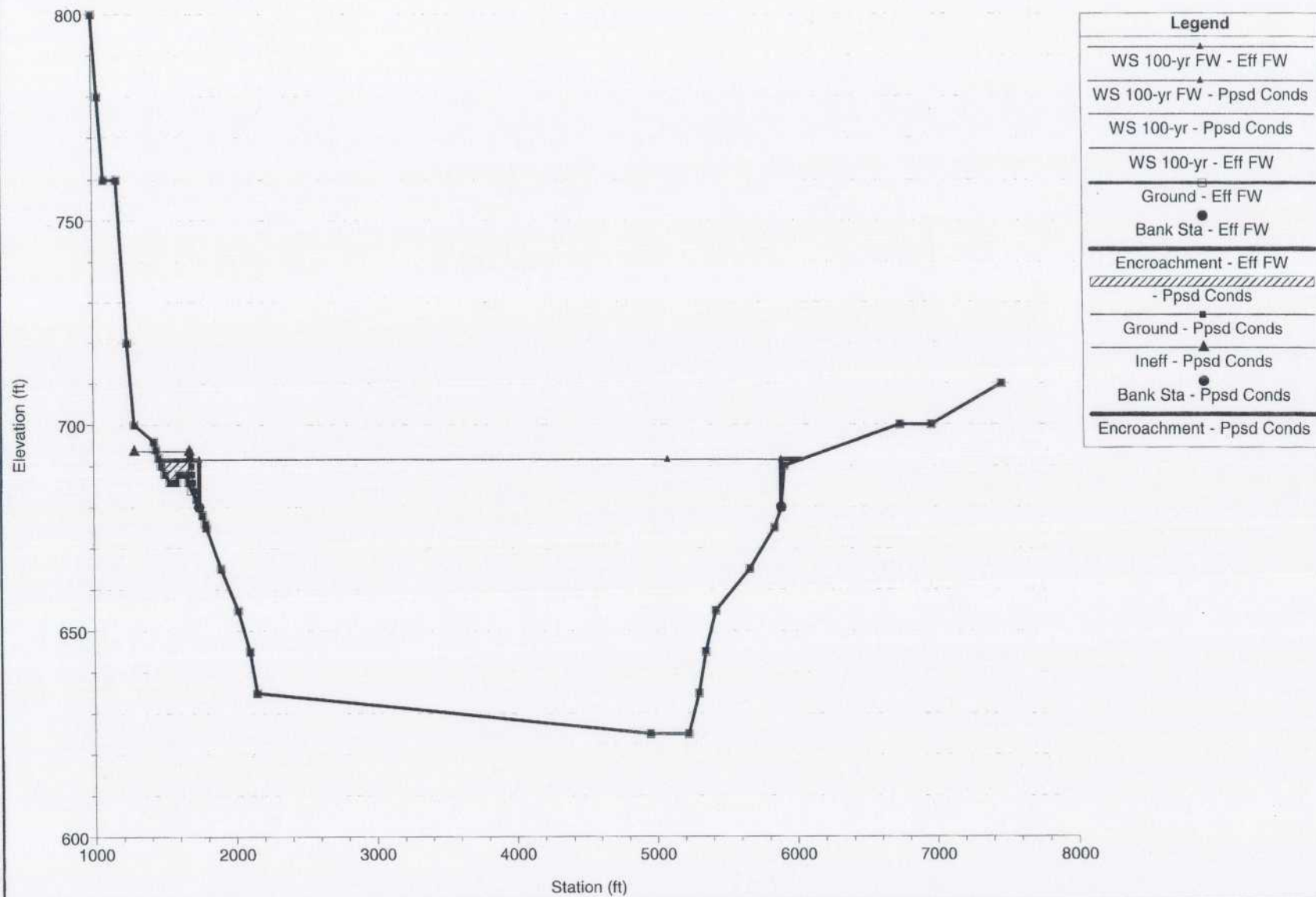


Legend	
WS 100-yr FW - Eff FW	▲
WS 100-yr FW - Ppsd Conds	▲
WS 100-yr - Ppsd Conds	—
WS 100-yr - Eff FW	—
Ground - Eff FW	■
Bank Sta - Eff FW	●
Encroachment - Eff FW	—
Ground - Ppsd Conds	■
Bank Sta - Ppsd Conds	●
Encroachment - Ppsd Conds	—

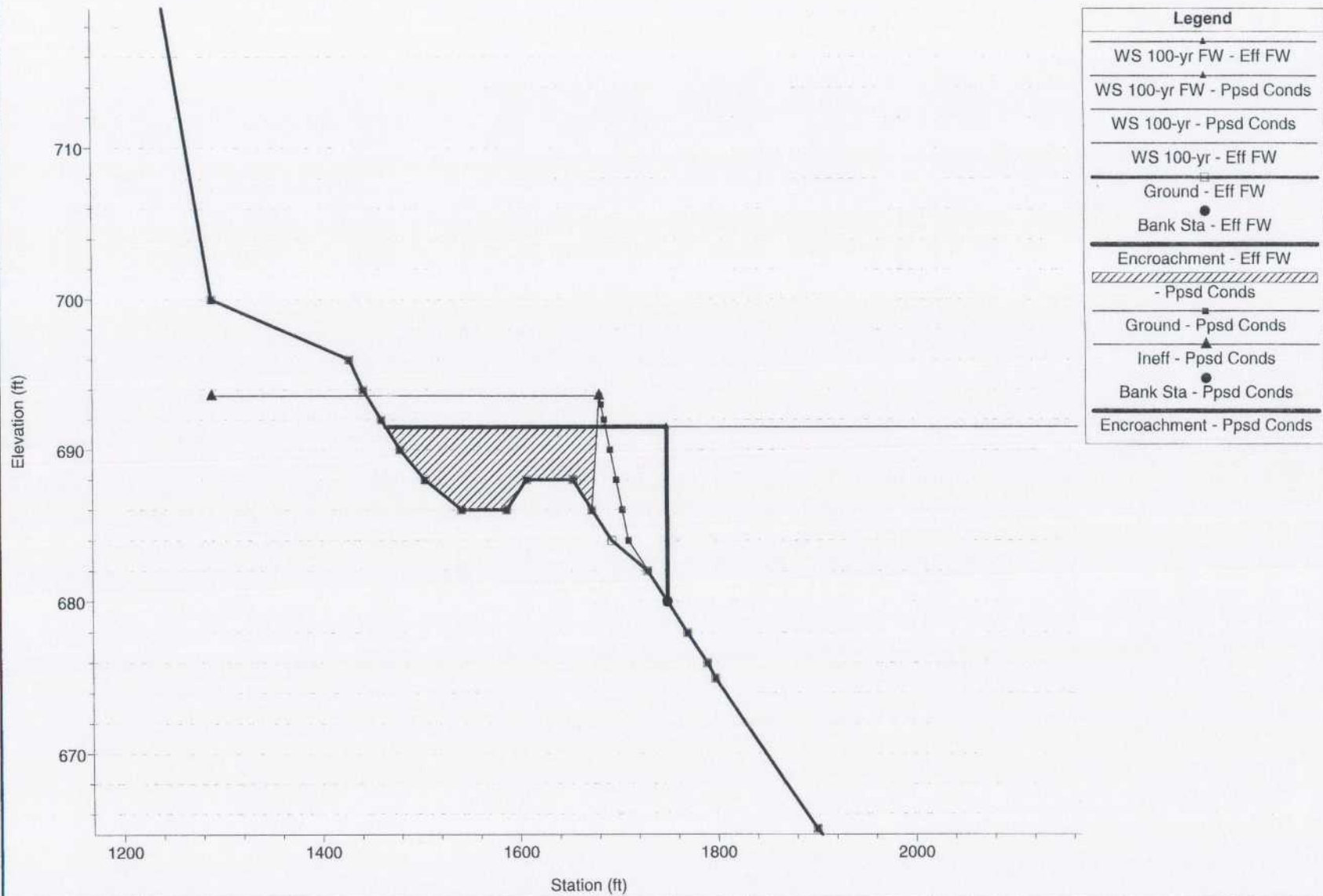
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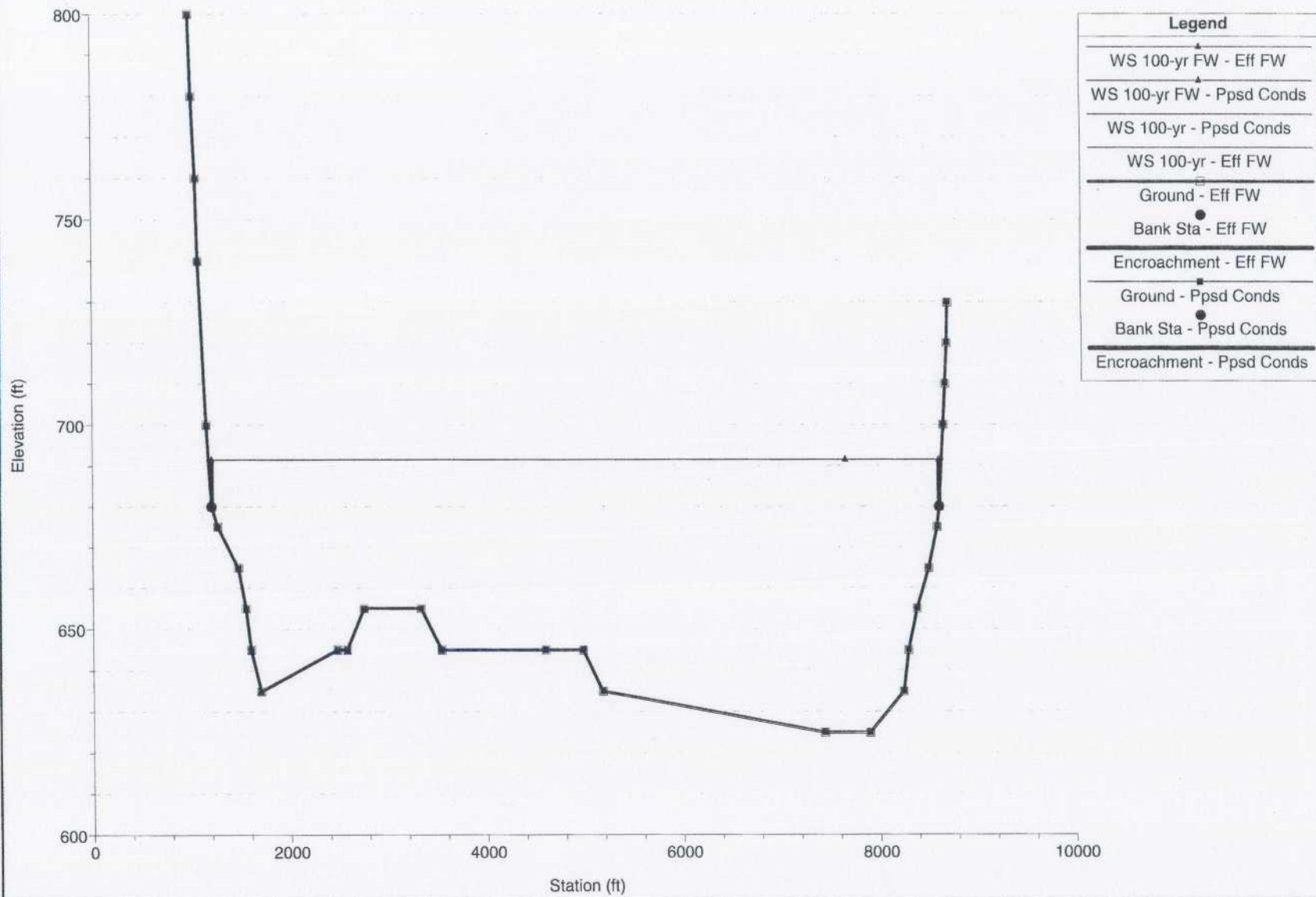
Geom: Proposed
RS = 5

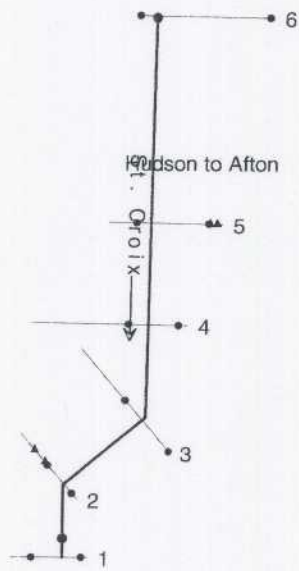


Geom: Proposed
RS = 5



1 in Horiz. = 150 ft 1 in Vert. = 10 ft

$$RS = 6$$




X

Waterway and Wetland Handbook

CHAPTER 40

ORDINARY HIGH-WATER MARK (OHWM)

GUIDANCE PURPOSE AND DISCLAIMER

This document is intended solely as guidance, and does not contain any mandatory requirements except where requirements found in statute or administrative rule apply. This guidance does not establish or affect legal rights or obligations, and is not finally determinative of any of the issues addressed. This guidance cannot be relied upon and does not create any rights enforceable by any party in litigation with the State of Wisconsin or the Department of Natural Resources. Any regulatory decision made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes, common law and administrative rules to the relevant facts.

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I. Purpose

The delineation of the ordinary high-water mark (OHWM) is a critical element in the administration of Wisconsin water law and is necessary for an effective water management program. The OHWM is the boundary between riparian owned uplands and the publicly owned beds of natural lakes. It is the boundary of public rights and interest in the waters of navigable streams and lakes except when the water is above the OHWM public rights are "enlarged." When the water is below the OHWM a riparian owner has a qualified right to use the land between the actual water level and the OHWM.

Department field staff determine the OHWM through on-site investigation and analysis of physical and biological indicators on a case-by-case basis.

II. Definition of OHWM in Wisconsin

Although "ordinary high-water mark" was used in a number of Wisconsin Supreme Court cases in the 1800's, the first definition of ordinary high-water mark is found in the Wisconsin Supreme Court case Lawrence v. American Writing Paper Co. (1911), 144 Wis. 556, 562:

...ordinary high-water mark, that is the point up to which the presence and action of the water is so continuous as to leave a distinct mark by erosion, destruction of vegetation, or other easily recognized characteristic.

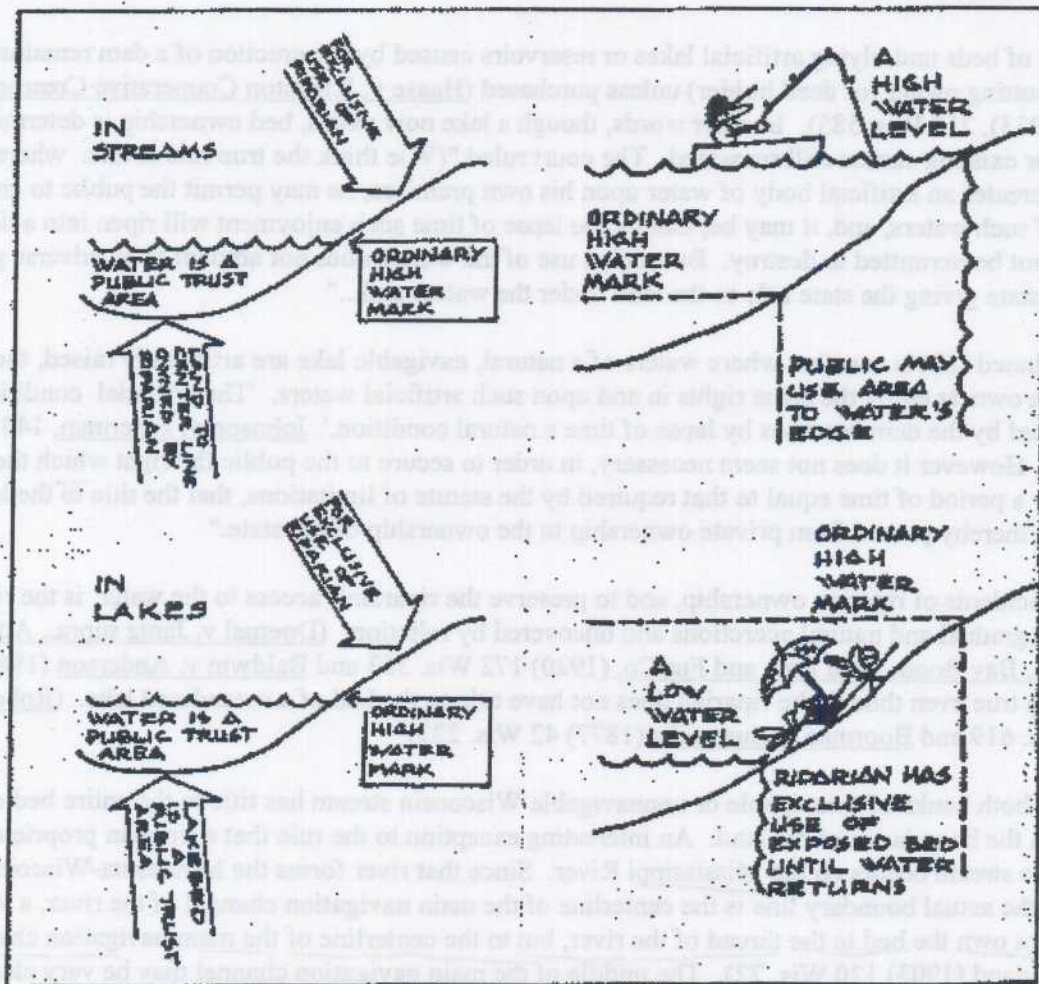
Three years later the Supreme Court redefined and expanded the definition in Diana Shooting Club v. Husting (1914), 156 Wis. 261, 272:

ownership of the bed of the stream, a riparian owner owns to the thread of the stream (Walker v. Shepardson (1855) 4 Wis. 495; Ne-pee-nauk Club v. Wilson (1897) 96 Wis. 290). The title of the riparian owner is, however, a qualified one, subject to the paramount interest of the state (Muench v. Public Service Comm. (1952) 261 Wis. 492; Ashwaubenon v. Public Service Comm. (1963), 22 Wis. (2d) 38). However, the owner of a land abutting a natural lake owns to the OHWM only, since title to the submerged lands beneath a lake belongs to the state (Angelo v. Railroad Commission (1928) 194 Wis. 543).

Private landowners whose lands make lateral contact with the waters of navigable lakes, where the state owns the bed, enjoy the exclusive right to access for private use (Delaplaine v. Chicago and Northwestern Ry Co., (1877) 42 Wis. 214). The general public can exercise its rights only if access to the water can be gained without trespassing over private property. As the recent decision in State v. McFarren (1974) 62 Wis. 2d 492, which reiterates Doemel v. Jantz (1923) 180 Wis. 225, points out:

A riparian owner has a qualified right to the land between the actual water level and the ordinary high-water mark; he may exclude the public therefrom but he may not interfere with the rights of the public for navigable purposes.

The sketches below illustrate the public right in relation to the OHWM:



IV. Determining the Ordinary High-Water Mark

A. What to look for when making an OHWM Determination

1. Biological Indicators:

- a. Mosses: mosses which are located on exposed rocks, stumps, tree roots, etc., are usually considered terrestrial and the lowermost elevation of these mosses is a good indicator of the OHWM. Some water mosses (e.g. Drepanocladus) form long strings and are aquatic and should not be used as indicators of the OHWM.
- b. Lichen: use these indicators with care for determining the OHWM. Use them mainly for recent, relatively short duration high water stage indicators. Extended high water periods eventually will kill and remove various lichen. Types to look for:
 1. Coarse brown lichen - usually lie above extreme high lake stages.
 2. Black - usually removed readily by water inundation.
 3. Orange Lichen - intermediate in their susceptibility to water destruction.
 4. Green Lichen - the lower most elevation of this lichen can indicate the highest water mark in recent years.
- c. Trees: the roots of living trees and shrubs along the shoreline will turn up and away from the water. Exposed bases and roots of older trees with roots growing primarily toward the shoreland on a horizontal plane are usually just above the OHWM if no slumpage has occurred.
 1. Water roots: Willow trees on the bank will put out red-brown water roots. The start of the water roots will be very near the OHWM. Beware of slumpage.
 2. Pancake roots: Birch, maples, tag alder and tamarack will form pancake shaped root mats usually just above the OHWM. Beware of slumpage.
 3. Pipe elbow roots: Birch and maple will curve their roots away from water forming a pipe elbow bend. The bottom of the root as it bends away will be very near the OHWM. Beware of slumpage.
- d. Pollen: pollen - especially pine pollen - often leaves marks on shore (particularly on large rocks) during spring and early summer. Not an indicator when considered by itself but will indicate recent high-water stages.
- e. Large Cattail Mat: The top of large cattail mats are often slightly above OHWM. Be careful of hummocks, floating bogs and mats, but be aware of where they exist in relation to your determination site.
- f. Algae stain: On rocks, stumps, etc. look for algae stain lines. On some rocks etc. it is possible that

5. Wave windrow areas: avoid wave windrow areas because aquatic and terrestrial vegetation may be smothered by wave carried materials (sand).
6. Trapped water: areas where water is trapped by ice ridges, etc., can indicate an elevated OHWM.
7. Pollen, algae marks as the sole basis: such marks are usually located above the OHWM. Pollen, especially pine pollen, often leaves yellowish marks particularly on large rocks during spring and early summer.
8. Averaging elevations of OHWM determinations. Individual determinations at the same location should be within 0.1 ft. in elevation. Do not average elevations.
9. Winds can cause increased water elevations at ends of long lakes. You may have to return on a calmer day to make an accurate determination of water level with reference to a benchmark. Water levels on the opposite sides of lakes elongated especially in an east and west direction could be effected by prevailing winds. There is therefore a possibility that the OHWM on the east and west ends of such lakes may be at different elevations. If you suspect this to be the case, level work should be tied into U.S.G.S. benchmarks or other reliable datum.
10. On lakes or flowages which are controlled by a dam, be wary of drawdowns, erratic level control operations, broken or missing flashboards, etc., that have or could affect water levels and thus the OHWM.
11. When you have a body of water with an inflow and/or an outflow one of the first things to do in an OHWM determination is to check these locations to see if there are any unusual conditions that could affect your conclusions such as blockages of the inlet or outlet, broken flashboards on the outlet dam, etc. It is also a good idea to tour most of the shoreline and note undisturbed areas before proceeding. If a map of the water body is available, these areas should be marked on the map for further investigation.
12. Remember the highest past water level is not necessarily the OHWM. Whenever possible existing past data on water level reading should be consulted in the determination of the OHWM.
13. Court decisions usually involve the question: could a prudent person have reached the same conclusion as you did in you OHWM determination?

V. How to Locate and Document the OHWM

1. Ordinary High-Water Mark determinations are to be made according to the definition in Diana Shooting Club vs. Husting 156 Wis. 261 (1914).
2. Check district and area files for previous OHWM determinations on the same waterbody. Also check all existing past water level readings.
3. Determine the OHWM using the physical and biological features (indicators) previously identified. Measure the distance of the indicators above or below the water level on the day(s) of observation. The water level on the day(s) of observation should be referenced to an easily identifiable benchmark (one method is to measure down from a culvert or wall to the water level). This benchmark (a measurement spot) should be carefully described and its exact location recorded in writing on the checklist, so that it can be found with ease at a future date if needed.
4. Find another spot near your first measurement and repeat the process. Take an adequate number of

CORRESPONDENCE/ MEMORANDUM

STATE OF WISCONSIN

DATE: September 19, 1983

FILE REF: 3550
(WMC)

TO: District Directors

FROM: Robert W. Roden

PMMS Response

Put in: Chapter 40, Water Regulation Handbook
Chapter 15, Floodplain Shoreland Management Guidebook

Distribution: All Water Management and Floodplain Staff

SUBJECT: Distinction Between the Terms: "Ordinary high-water mark", "Normal high-water elevation",
and "High Water Mark".

1. Are the terms "normal high-water mark" and "ordinary high-water mark" synonymous? If so, why was "normal" changed to "ordinary" in Chapter 330, Laws of 1981?

As used in s. 59.971, 1979, Stats., the phrase "normal high-water elevation" is synonymous with the phrase "ordinary high-water mark." The Department has consistently interpreted the phrase "normal high-water elevation" in s. 59.971 to mean the same as "ordinary high-water mark," and the Wisconsin Supreme Court has never indicated (or even hinted) that "normal high-water elevation" is something different than "ordinary high-water mark" (either before or after the enactment of Chapter 614, Laws of 1965, which created s. 59.971, Stats.)

We have no idea why the drafter of Chapter 614, Laws of 1965 (which created s. 59.971) used the phrase "normal high-water elevation" in s. 59.971 in the first place, since the Wisconsin Supreme Court has used the terminology "ordinary high-water mark" consistently since 1911, when the term was first defined in Lawrence vs. American Writing Paper Company, 144 Wis. 556 (1911). It seems reasonable to assume thereby the reasons for changing "normal" to "ordinary" (and "elevation" to "mark") in Chapter 330, Laws of 1981, were:

- a. To make the statutory language identical to the terminology used by the Wisconsin Supreme Court; and
 - b. To avoid confusion with the concept of mean (or average) water level which is sometimes described as the "normal stage of water" or the "normal water elevation." See, for example Polebitzke vs. John Week Lumber Company, 163 Wis. 322, 325-326 (1916).
2. What is the distinction between "ordinary high-water mark" and "high watermark"? If there is no distinction, is the statute language flawed?

There is a distinction between the concept of "ordinary high-water mark" and the concept of "high watermark" (or "high-water mark"). However, there may be no practical distinction when it comes to applying the two concepts to a particular body of water at a particular time. "Ordinary high-water

CORRESPONDENCE/ MEMORANDUM

STATE OF WISCONSIN

DATE: June 14, 1984
(WMC)

3500

TO: District Directors

FROM: Robert W. Roden - WRZ/5

PMMS Response

Put in: Chapter 40, Water Regulation Handbook

Distribution: All Program Staff

SUBJECT: Operation of Motor Vehicles in Water Prohibited

We have been asked if operation of a motor vehicle upon the exposed bed of a lake or stream under low water conditions is a prohibited activity under section 30.29 Wis. Stats.

Section 30.29(2) states no person may operate a motor vehicle in any navigable waters of the state with the exceptions identified in 30.29(2). Review of the Legislative history of 30.29 shows that the term in any navigable waters is meant to include the bed of any water of the state below the OHWM. Therefore, operation of a motor vehicle on the exposed bed below the OHWM, subject to the exceptions of 30.29(3), could be regulated under 30.29(2) and the operator subject to enforcement and penalty under 30.29(4).

It should also be noted that State v. McFarren (1974) 62 Wis. 2d 492, points out:

A riparian owner has a qualified right to the land between the actual water level and the ordinary high water mark; he may exclude the public therefrom but may not interfere with the rights of the public for navigable purposes.

Therefore, any operation of a motor vehicle upon the exposed bed of a lake or stream would be subject to the consent of the affected riparian owner(s). Riparian owners may deny access to the exposed bed and prosecute an operator for trespass if they so desire. They may not, however, deny access by the installation of a fence or similar physical structure constructed or placed below the ordinary high water mark unless a permit has been issued under 30.12.

Reviewed By: John Coke
Scott Hausmann
Mike Cain

CORRESPONDENCE/ MEMORANDUM

STATE OF WISCONSIN

DATE: May 15, 1985

3550
(WMC)

TO: District Directors

FROM: George E. Meyer - AD/5

PMMS Response

Insertion: Chapter 40, Water Regulation Handbook

Distribution: Program Staff
All Conservation Wardens

SUBJECT: Operation of Motor Vehicles in Water Prohibited

We have been provided with additional information that indicates the July 30, 1984 memo on this subject was in error. The original proposal to create section 30.29, Wis. Stats., prohibited operation of a motor vehicle "in the waters of the state or on the bed of any water of the state below the high water mark." Section 30.29(2) now states "in any navigable waters of the state." Our previous memo of July 30, 1984 was based on information that the reason for the change in section 30.29(2) was to exclude regulation of vehicles operated on exposed beds. We have now been informed that the reason for the change to drop "on the bed..." was simply due to the fact that the term "in any navigable waters" includes the exposed bed below the ordinary high water mark and the original wording was simply repetitious.

Therefore, our policy shall be that operation of a motor vehicle on the exposed bed below the OHWM, subject to the exceptions of 30.29(3), is regulated under 30.29(2) and the operator subject to enforcement and penalty under 30.29(4).

It should also be noted that State v. McFarren (1974) 62 Wis. 2d 492, points out:

A riparian owner has a qualified right to the land between the actual water level and the ordinary high water mark; he may exclude the public therefrom but may not interfere with the rights of the public for navigable purposes.

Therefore, any legal operation of a motor vehicle upon the exposed bed of a lake or stream under the exceptions identified in 30.29(3) would be subject to the consent of the affected riparian owner(s). Riparian owners may deny access to the exposed bed and prosecute an operator for trespass if they so desire.

Reviewed By: John Coke
Scott Hausmann,
Mike Cain
Dale Morey

JC:slh
6421K

ORDINARY HIGH WATER MARK

Definition

Ordinary high water mark - "the point on the bank or shore up to which the presence and action of the water is so continuous as to leave a distinct mark either by erosion, destruction of terrestrial vegetation or other easily recognized characteristic." Diana Shooting Club v. Husting (1914), 156 Wis. 261, 272.

Refer to Chapter 40, Water Regulation Handbook for additional information.

Bed of the waterbody between normal water level and OHWM need not be navigated to assert state jurisdiction (clarified in the Trudeau case).

Considerations prior to making an OHWM Determination

1. The ultimate decision you make should meet the "reasonable-prudent test." Could a prudent person come to the same conclusion as you?
2. Can you defend your determination sufficiently to hold up in court? This becomes a very important issue where multiple OHWMs are present. Very common for lakes.
3. What kind of documentation will you rely upon to verify your determination? (Plants, water stains, wash marks, etc.) How can someone else verify the location of the OHWM? Will you take photos? Do you need a survey and benchmarks? Will you retain a record of your determination? How? Where?
4. Department liability. As a representative of the state you make a decision that carries great weight. Not only in the sense of determining public and private rights, but your decision is also a potential liability to the state. Recent legislation allows one who is regulated to recover costs and damages for invalid determinations where the judicial system finds the state has erred (see s. 227.115, Stats.). In other words, mistakes can cost lots of dollars.
5. Are you dealing with an altered waterway? Is it a flowage, perched lake or a stream with beaver problems? What has the average annual precipitation been in the past? What is it for the existing year? Are water levels too high (e.g., spring)? Is the waterway frozen (this can have a significant bearing on floating bogs)? All of these factors and more can have a bearing on your ultimate OHWM determination.

Ordinary high water marks are generally established by the presence of water at a given elevation for a minimum of 30-70 days a year, over a twenty year period. Water marks similar to OHWMs can be established in a short period of time. Rely upon OHWM indicators that reflect a long time period. An ordinary high water mark that is indicative of the longest time period will generally be the easiest to defend.

The recommended procedure for determining an OHWM is to identify mature woody upland vegetation and work your way waterward. As you progress waterward you will find transitional plants (plants found above and below the OHWM) and aquatics (plants always found below the OHWM). Fine tuning of an

Scientific Name

Nelumbo lutea
Nymphaea sp.
Nuphar microphyllum
Potentilla palustris
Sparganium lp.
Brasenia schreberi
Sagittaria sp.
Megalodonta Beckii
Potenderia cordata
Scirpus fluviatilis
Scirpus validus
Chamaedaphne calyculata

Common Name

American lotus
 White water lily
 Yellow water lily
 Marsh cinquefoil
 Bur reed
 Water shield
 Arrowhead
 Water marigold
 Pickerelweed
 Giant Bulrush
 Soft Stem Bulrush
 Leather leaf

Transitional Plants Found Above and Below the OHWM***Scientific Name***

Circuta maculata
Hypericum perforatum
Leersia oryzoides
Isoetes sp.
Alismia gramineum
Calla palustris
Acorus calamus
Cyperus sp.
Alnus sp.
Typha latifolia
Phalaris arundinacea
Phragmites maximus
Salix sp.
Acer saccharinum
Fraxinus americana
Fraxinus nigra
Fraxinus pennsylvanica
Larix laricina
Drosera rotundifolia
Betula nigra
Cirsium arvense
Symplocarpus foetidus
Asclepias incarnate
Solidago graminifolia
Polygonum punctatum
Solanum dulcamara
Equisetum sp.
Iris versicolor
Iris pseudacorus
Quercus bicolor
Chelone glabra
Populus deltoides
Rumex crispus
Impatiens capensis

Common Name

Water hemlock
 St. John's-Wort
 Cutgrass*
 Quillwort*
 Water plantain*
 Water arum
 Sweet flag*
 Nut grass*
 Alder
 Cattail
 Reed canary grass
 Reed grass
 Willows *
 Silver maple *
 White ash *
 Black ash
 Green ash
 Tamarack
 Round-leaved sundew
 River birch
 Canada thistle
 Skunk cabbage
 Swamp milkweed*
 Lance-leaved Goldenrod
 Smartweed
 Purple nightshade
 Horsetail
 Blue flag
 Yellow figg
 Swamp white oak
 Turtlehead
 Cottonwood *
 Curly dock
 Jewelweed*

*Most often located below the OHWM

CORRESPONDENCE/ MEMORANDUM

STATE OF WISCONSIN

DATE: July 26, 1993

FILE REF: 3500

TO: All WR&Z Guidebook Holders

FROM: Dale Simon WZ/6

SUBJECT: OHWM Description Checklist - Form 3500-46.

Some time ago, when I was reviewing program forms, Form 3500-46 was DELETED. Unfortunately, I must not have told anyone else.

Please remove this form from your guidebook, if you still have it in there. It is no longer an official form. The implication is that if it is in your guidebook (even though only a guide) then you should use it for all OHWM determinations.

Also, in Chapter 40, page 40-6, V. 2. cross off the sentence: (This is a good reason to use the Ordinary High-Water Mark Description check list, form 350046.) and also cross off paragraph V. 3.: Document every OHWM determination on the Ordinary High-Water Mark Description Checklist, form 3500-46. A copy of the OHWM checklist should be filed with both the district and Madison office.

Sorry I didn't get this to you earlier.

TWIN SPRINGS SOUTH
LOS

Distance fr Species	common name	wetland IND	conversion	Coefficient of Conservatism
0 <i>Carex emoryii</i>	Emory's sedge	OBL	1	6
<i>Acer saccharinum</i> (seedlings)	silver maple	FACW	2	2
<i>Acer saccharinum</i> (canopy)	silver maple	FACW	2	2
			1.666667	3.333333
10 <i>Carex emoryii</i>	Emory's sedge	OBL	1	6
<i>Acer saccharinum</i> (seedlings)	silver maple	FACW	2	2
<i>Betula nigra</i>	river birch	FACW	2	6
<i>Acer saccharinum</i> (canopy)	silver maple	FACW	2	2
			1.75	4
20 <i>Carex emoryii</i>	Emory's sedge	OBL	1	6
<i>Lindernia dubia</i>	moist bank pimpernal	OBL	1	6
<i>Fraxinus pennsylvanica</i>	green ash	FACW	2	2
<i>Physostegia virginiana</i>	false dragonhead	FACW	2	7
<i>Acer saccharinum</i> (canopy)	silver maple	FACW	2	2
			1.6	4.6
30 <i>Carex emoryii</i>	Emory's sedge	OBL	1	6
<i>Lindernia dubia</i>	moist bank pimpernal	OBL	1	6
<i>Acer saccharinum</i> (canopy)	silver maple	FACW	2	2
<i>Tilia americana</i> (canopy)	American linden or basswood	FACU	4	5
			2	4.75
40 <i>Carex emoryii</i>	Emory's sedge	OBL	1	6
<i>Lindernia dubia</i>	moist bank pimpernal	OBL	1	6
<i>Acer saccharinum</i> (seedlings)	silver maple	FACW	2	2
<i>Acer saccharinum</i> (canopy)	silver maple	FACW	2	2
<i>Tilia americana</i> (canopy)	American linden or basswood	FACU	4	5
<i>Fraxinus pennsylvanica</i> (canopy)	green ash	FACW	2	2
			2	3.833333
50 <i>Acer saccharinum</i> (seedlings)	silver maple	FACW	2	2
<i>Carex emoryii</i>	Emory's sedge	OBL	1	6
<i>Acer saccharinum</i> (canopy)	silver maple	FACW	2	2
<i>Tilia americana</i> (canopy)	American linden or basswood	FACU	4	5
<i>Fraxinus pennsylvanica</i> (canopy)	green ash	FACW	2	2
			2.2	3.4
60 <i>Acer saccharinum</i> (seedlings)	silver maple	FACW	2	2
<i>Acer saccharinum</i> (canopy)	silver maple	FACW	2	2
<i>Tilia americana</i> (canopy)	American linden or basswood	FACU	4	5
<i>Fraxinus pennsylvanica</i> (canopy)	green ash	FACW	2	2

			2.5	2.75
70	<i>Asarum canadense</i>	wild ginger	5	7
	<i>Ranunculus abortivus</i>	little buttercup	2	1
	<i>Thalictrum thalictroides</i>	rue anemone	5	7
	<i>Phalaris arundinacea</i>	reed-canary grass	2	
	<i>Oxalis stricta</i>	common wood sorrel	4	0
	<i>Acer saccharinum</i> (seedlings)	silver maple	2	2
	<i>Cystopteris fragilis</i>	fragile fern	4	6
	<i>Anemone canadensis</i>	Canada anemone	2	4
	<i>Acer saccharinum</i> (canopy)	silver maple	2	2
	<i>Ulmus americana</i> (canopy)	American elm	2	3
	<i>Polygonatum pubescens</i>	solomon's seal	5	6
			3.181818	3.8
			This where there appears to be a break from hyrophilic to upland vegetation	
80	<i>Aquilegia canadensis</i>	columbine	3	5
	<i>Thelypteris palustris</i>	marsh fern		7
	<i>Asarum canadense</i>	wild ginger	5	7
	<i>Acer saccharinum</i> (canopy)	silver maple	2	2
	<i>Carpinus carolinia</i> (canopy)	American hornbeam	3	6
			3.25	5.4
90	<i>Asarum canadense</i>	wild ginger	5	7
	<i>Thalictrum dasycarpum</i>	meadowrue	2	4
	<i>Polygonatum pubescens</i>	solomon's seal	5	6
	<i>Cystopteris fragilis</i>	fragile fern	4	6
	<i>Ranunculus abortivus</i>	little buttercup	2	1
	<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	2	5
	<i>Menispermum canadense</i>	moonseed vine	3	5
	<i>Aster sagittifolius</i>	arrow-leaved aster	5	3
	<i>Sanguinaria canadensis</i>	bloodroot	4	6
	<i>Ribes cynobasti</i>	gooseberry	5	3
	<i>Acer saccharinum</i> (canopy)	silver maple	2	2
			3.545455	4.363636

According to the mean Coefficients of Conservatism, the plant community is very tolerant (0-3), to moderately tolerant (4-6) of disturbance. Flooding would be a disturbance

TWIN SPRING NORTH

C.09

Distance from Species	common name	wetland IND	conversion	Coefficient of Conservatism
0 <i>Carex emoryii</i>	Emory's sedge	OBL	1	6
<i>Iris versicolor</i>	blue-flag iris	OBL	1	5
<i>Equisetum laevigatum</i>	smooth horsetail	FACW	2	2
<i>Acer saccharinum</i> (canopy)	silver maple	FACW	2	2
<i>Fraxinus pennsylvanica</i> (canopy)	green ash	FACW	2	2
			1.6	3.4
10 <i>Carex emoryii</i>	Emory's sedge	OBL	1	6
<i>Equisetum laevigatum</i>	smooth horsetail	FACW	2	2
<i>Anemone canadensis</i>	Canada anemone	FACW	2	4
<i>Ulmus americana</i> (seedlings)	American elm	FACW-	2	3
<i>Acer saccharinum</i> (canopy)	silver maple	FACW	2	2
<i>Fraxinus pennsylvanica</i> (canopy)	green ash	FACW	2	2
<i>Ulmus americana</i> (canopy)	American elm	FACW-	2	3
			1.857143	3.142857
20 <i>Equisetum laevigatum</i>	smooth horsetail	FACW	2	2
<i>Anemone canadensis</i>	Canada anemone	FACW	2	4
Moss				
<i>Fraxinus pennsylvanica</i> (canopy)	green ash	FACW	2	2
<i>Ulmus americana</i> (canopy)	American elm	FACW-	2	3
			2	2.75
30 <i>Equisetum laevigatum</i>	smooth horsetail	FACW	2	2
<i>Zanthoxylum americanum</i>	prickly ash		5	3
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	FACW-	2	5
<i>Ribes cynobasti</i>	gooseberry		5	3
<i>Pathenocissus quinquefolia</i>	Virginia creeper	FAC-	3	5
<i>Thalictrum dasycarpum</i>	meadowrue	FACW-	2	4
<i>Galium triflorum</i>	sweet-scented bedstraw	FACU+	4	5
<i>Phalaris arundinacea</i>	reed-canary grass	FACW+	2	
<i>Ulmus americana</i> (canopy)	American elm	FACW-	2	3
<i>Quercus rubra</i> (canopy)	red oak	FACU	4	5
			3.1	3.888889
This where there appears to be a break from hyrophilic to upland vegetation				
34 <i>Equisetum laevigatum</i>	smooth horsetail	FACW	2	2
<i>Zanthoxylum americanum</i>	prickly ash		5	3
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	FACW-	2	5

C.09

Pathenocissus quinquefolia	Virginia creeper	FAC-	3	5
Polygonatum pubescens	solomon's seal		5	6
Impatiens capensis	jewelweed	FACW	2	2
Ribes cynobasti	gooseberry		5	3
Ulmus americana (canopy)	American elm	FACW-	2	3
Acer rubrum (canopy)	red maple	FAC	3	3
Juniperus virginiana (canopy)	eastern red cedar	FACU	4	3
			3.3	3.5

KOLB 1

C. 20

There was no indication of dominant species on this site so I average the values of the OBL/FAC's conversion values.

Distance fr Species	common name	wetland IND	conversion	Coefficient of Conservatism
0 Salix nigra	black willow	OBL	1	4
			1	4
1 Cornus stolonifera	red-osier dogwood	FACW	2	3
Moss				
Vitis riparia	river grape	FACW-	2	2
Solidago gigantea	giant goldenrod	FACW	2	3
Acer saccharinum	silver maple	FACW	2	2
			2	2.5
2 Cornus stolonifera	red-osier dogwood	FACW	2	3
Rosa blanda	smooth rose	FACU	4	4
Ulmus americana	American elm	FACW-	2	3
Betula nigra	river birch	FACW	2	6
Lonicera tartarica	honeysuckle	FACU	4 exotic	
Laportea canadensis	wood nettle	FACW	2	4
Prunus virginiana	choke cherry	FAC-	3	3
			2.7142857	3.833333
10 Cornus stolonifera	red-osier dogwood	FACW	2	3
Moss			2	3
12 Cornus stolonifera	red-osier dogwood	FACW	2	3
Moss				
Laportea canadensis	wood nettle	FACW	2	4
Vitis riparia	river grape	FACW-	2	2
Fraxinus pennsylvanica	green ash	FACW	2	2
			2	2.75
20 Rosa blanda	smooth rose	FACU	4	4
Laportea canadensis	wood nettle	FACW	2	4
Vitis riparia	river grape	FACW-	2	2
Fraxinus pennsylvanica	green ash	FACW	2	2
			2.5	3
33 Moss				
Aquilegia canadensis	columbine	FAC-	3	5
Quercus rubra	red oak	FACU	4	5

Mosses require fruiting bodies to ID.

2 Anyway there are no OBL/FAC assignments to moss, so could not figure into equation

3 But I definitely provide a discussion on mosses for your report.

According to the mean Coefficients of Conservatism, the plant community is very tolerant (0-3), to moderately tolerant (4-6) of disturbance. Flooding would be a disturbance

Carex emoryi	Emory's sedge	OBL	1	6
Pathenocissus quinquefolia	Virginia creeper	FAC-	3	5
Tilia americana	American linden or basswood	FACU	4	5
Toxicodendron radicans	poison-ivy	FAC+	3	4
Rhamnus frangula	glossy buckthorn	FAC+	3 exotic	
Acer negundo	boxelder	FACW-	2	0
Taraxicum officinale	dandelion	FACU	4 exotic	
			3	4.285714

This where there appears to be a break from hyrophilic to upland vegetation

C.20

Distance fr Species common name You had dominance for this one, but it is easier to average, let me know if that is not okay.
 wetland IND conversion Coefficient of Conservatism

ROLL 2

620

0	<i>Fraxinus pennsylvanica</i>	green ash	FACW	2	2
	Moss				
	<i>Cornus stolonifera</i>	red-osier dogwood	FACW	2	3
	<i>Acer saccharinum</i>	silver maple	FACW	2	2
	oak				
	<i>Tilia americana</i>	American linden or	FACU	4	5
	<i>Laportea canadensis</i>	wood nettle	FACW	2	4
	<i>Rosa blanda</i>	smooth rose	FACU	4	4
	<i>Solidago gigantea</i>	giant goldenrod	FACW	2	3
				2.571429	3.285714
According to the mean Coefficients of Conservatism, the plant community is					
very tolerant (0-3) of disturbance. Flooding would be a disturbance					
25	<i>Prunus virginiana</i>	choke cherry	FAC-	3	3
	<i>Rhamnus frangula</i>	glossy buckthorn	FAC+	3 exotic	
	<i>Vitis riparia</i>	river grape	FACW-	2	2
	<i>Cornus amomum</i>	silky dogwood	FACW+	2	4
				2.5	3
26	<i>Juniperus virginiana</i>	eastern red cedar	FACU	3	3
				3	3
This where there appears to be a break from hydrophilic to upland vegetation					

30 oak
 fern

Feet from shore				
910	sand	Panicum virgatum (FAC+) (4)	Salix exigua (OBL) (2)	
914'	sand	Panicum virgatum (FAC+) (4)	Ambrosia artemisifolia FACU (0)	Cyperus schweinitzii FACU (4)
920	Panicum virgatum (FAC+) (4)	Ambrosia artemisifolia FACU (0)		
925 (at soil pit)	Panicum virgatum (FAC+) (4)	Oenothera biennis FACU (1)		
930	Panicum virgatum (FAC+) (4)	Vitis riparia FACW- (2)	Panicum oligosanthos FACU	
934	Panicum virgatum (FAC+) (4)	lot of bare sand		
940	Panicum virgatum (FAC+) (4)	Oenothera biennis FACU (1)	Salix nigra (OBL) (4)	
944	Panicum virgatum (FAC+) (4)	Oenothera biennis FACU (1)	Centaurea maculosa	
950	Panicum virgatum (FAC+) (4)	Acer saccharinum FACW (2)	Vitis riparia FACW- (2)	Salix exigua (OBL) (2)

	Centaurea maculosa	exotic			WD
			3.5	2.5	
950	Panicum virgatum	FAC+	3	4	SB
	Vitis riparia	FACW-	2	2	
	Salix exigua	(OBL)	1	2	
	Acer saccharinum	FACW	2	2	
			2	2.5	

SB indicates that this is a species of sand barren communities (Curtis, Vegetation of Wisconsin 1959)

WD indicates that this is a species of disturbed weed communities (Curtis, Vegetation of Wisconsin 1959)

This species are at this site due to the extreme sandiness of the sited, likely deposited by the river and therefore a
This is not an ideal site to determine wetland status from the vegetation.

Feet from point - toward shore				Community affiliation	
0 Robinia pseudoacacia	black locust	FACU-	4	exotic	W
Zanthoxylum americanum	prickly ash				3 SDM
Panicum oligosanthos		FACU	4		4 PDM
Ulmus americana		FACW-	2		3
		3.33333	3.33333		
2 Panicum oligosanthos		FACU	4	4	
Aster ontarionis		FAC	3	6 FN	Fen
Panicum virgatum		FAC+	3	4 SB	Sand Barrens
		3.33333	4.66667		
4 Populus deltoides	cottonwood	FAC+	3	2	
Panicum oligosanthos		FACU	4	4	
Oenothera biennis		FACU	4	1	
		2.66667	3		
6 Panicum virgatum		FAC+	3	4 SB	
Ambrosia artemisiifolia		FACU	4	0	
Cyperus schweinitzii		FACU	4	4 SB	
Erigeron strigosus		FAC-	3	2 SB prevalent	
		3.5	2.5		
8 bare sand					
Panicum virgatum		FAC+	3	4 SB	
Ambrosia artemisiifolia		FACU	4	0	
		3.5	2		
10 Panicum virgatum		FAC+	3	4 SB	
Ambrosia artemisiifolia		FACU	4	0	
Cyperus schweinitzii		FACU	4	4 SB	
Erigeron strigosus		FAC-	3	2 SB prevalent	
Salix exigua		(OBL)	1	2	
		3	2.4		
12 Panicum virgatum		FAC+	3	4 SB	
Cyperus schweinitzii		FACU	4	4 SB	
Erigeron strigosus		FAC-	3	2 SB prevalent	
		3.33333	3.33333		
14 Salix exigua		(OBL)	1	2	
<p>There is no clear break in the mean wetland indicator value at this site. The prevalence of species that are indicators of sand barren habitats complicates the computation. This is not an ideal site to determine wetland status from the vegetation.</p>					

KION/ C-24
SLOUGH
AREA
TRANSECT 1
CHANGE IN
DISTANCES
TO GO
AROUND
SLOUGH

Feet from shore

910	sand				
	Panicum virgatum	FAC+	3	4	SB
	Salix exigua	(OBL)	1	2	
			2	3	
914'	sand				
	Panicum virgatum	FAC+	3	4	SB
	Ambrosia artemisifolia	FACU	4	0	WD
	Cyperus schweinitzii	FACU	4	4	SB
			3.666667	2.666667	
920	Panicum virgatum	FAC+	3	4	SB
	Ambrosia artemisifolia	FACU	4	0	WD
			3.5	2	
925 (at soil	Panicum virgatum	FAC+	3	4	SB
	Oenothera biennis	FACU	4	1	
			3.5	2.5	
930	Panicum virgatum	FAC+	3	4	SB
	Panicum oligosanthos	FACU	4	4	
	Vitis riparia	FACW-	2	2	
			3	3.333333	
934	Panicum virgatum	FAC+	3	4	SB
	lots of bare sand				
940	Panicum virgatum	FAC+	3	4	SB
	Oenothera biennis	FACU	4	1	
	Salix nigra	OBL	1	4	
			2.666667	3	
944	Panicum virgatum	FAC+	3	4	SB
	Oenothera biennis	FACU	4	1	

Distance fr Species

common name

wetland IND

There was no indication of dominant species on this site so I average the values of the OBL/FAC's conversion values.
conversion Coefficient of Conservatism

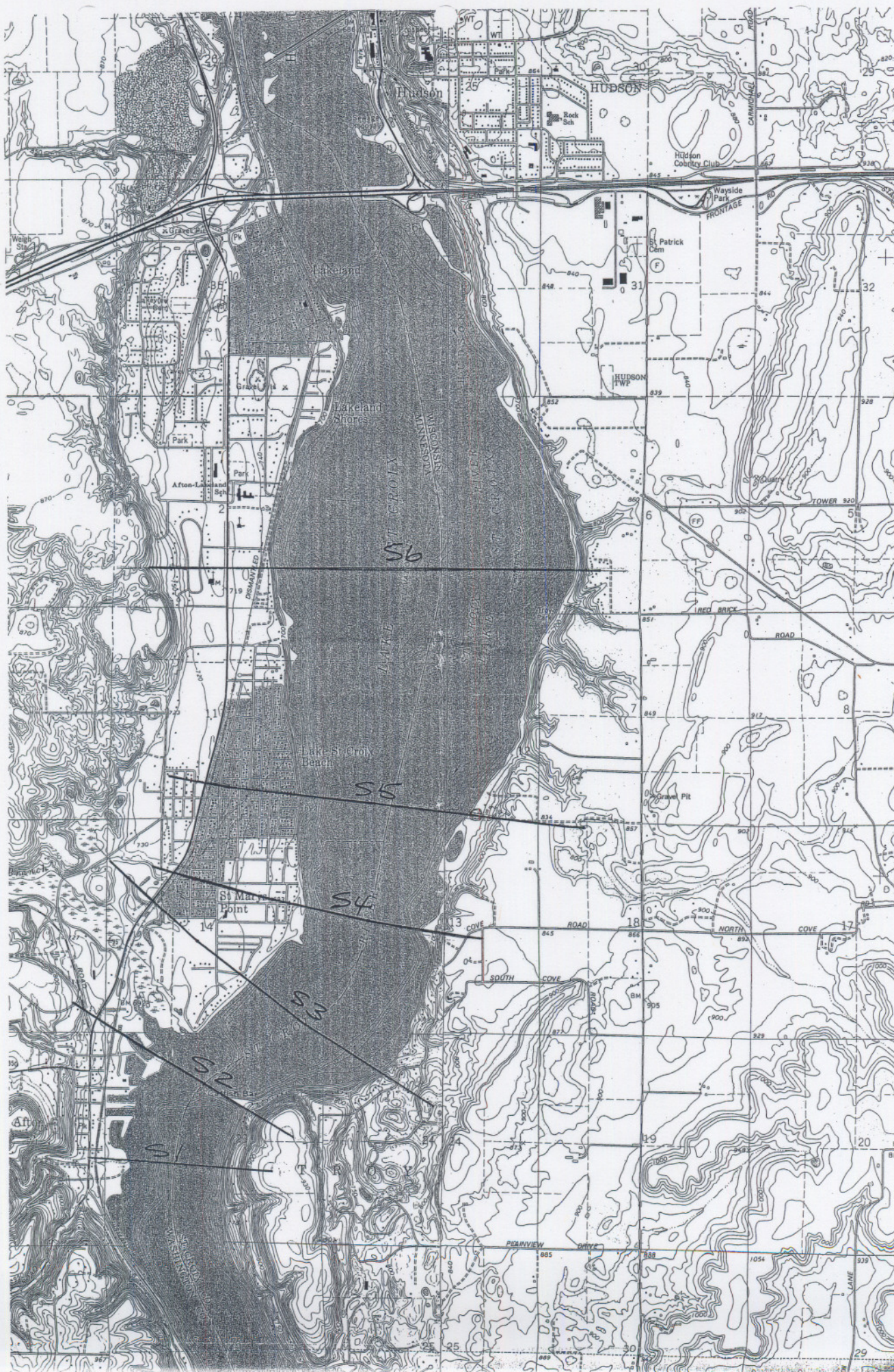
C.33

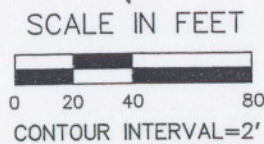
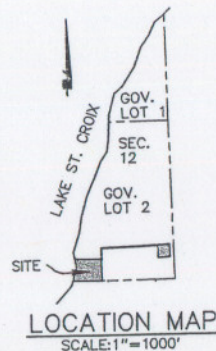
0	Rhamnus frangula	glossy buckthorn	FAC+	3	exotic
	Fraxinus pennsylvanica	green ash	FACW	2	2
	Ulmus americana	American elm	FACW-	2	3
				2.333333	2.5
10	Rhamnus frangula	glossy buckthorn	FAC+	3	exotic
	Fraxinus pennsylvanica	green ash	FACW	2	2
	Ulmus americana	American elm	FACW-	2	3
				2.333333	2.5

I did not find data after 10 feet

The average of the conversion values seem to indicate that it is still hydrophytic vegetation

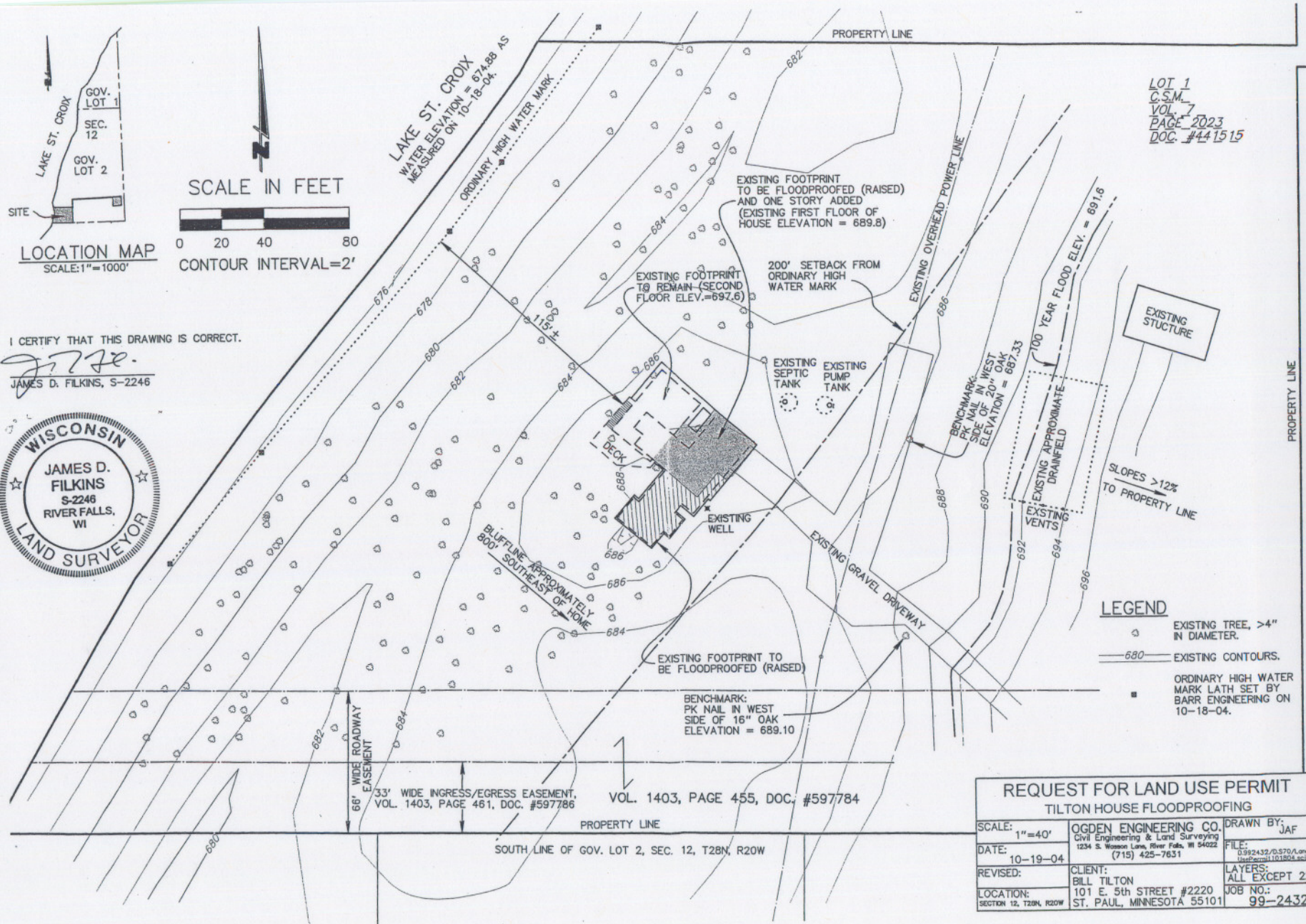
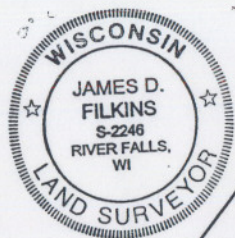
Average of the Coefficients seem to indicate the plant community is very tolerant of disturbance (Flooding?)





I CERTIFY THAT THIS DRAWING IS CORRECT.

J.D.F.
JAMES D. FILKINS, S-2246



LEGEND

- EXISTING TREE, >4" IN DIAMETER.
- EXISTING CONTOURS.
- ORDINARY HIGH WATER MARK LATH SET BY BARR ENGINEERING ON 10-18-04.

REQUEST FOR LAND USE PERMIT TILTON HOUSE FLOODPROOFING

SCALE: 1"=40'	OCDE ENGINEERING CO. DRAWN BY: JAF
DATE: 10-19-04	Civil Engineering & Land Surveying 1234 S. Wisconsin Lane, River Falls, WI 54022 (715) 425-7631
REVISED:	CLIENT: BILL TILTON
LOCATION: SECTION 12, T28N, R20W	101 E. 5th STREET #2220 ST. PAUL, MINNESOTA 55101
	FILE: 0992432/0570/Land Use/0992432/101904.scd
	LAYERS: ALL EXCEPT 22
	JOB NO.: 99-2432

TILTON RESIDENCE

278 WEST GROVE ROAD
HUDSON, WI 54016-8015

TWA

THOMAS WHITCOMB ARCHITECT, INC.

6741 Plymouth Avenue North
Golden Valley, MN 55427
(763) 593.4985 fax (763) 543.0204
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I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly registered architect under the laws of the State of Minnesota.

LICENSE NUMBER: 20126

DATE: 10.19.04

SCALE: 1" = 40'-0"

DRAFT - NOT FOR CONSTRUCTION

EXISTING SITE PLAN

DRAWING NUMBER
AI

LOT 1
C.S.M.
VOL. 7
PAGE 2025
DOC. #441515
9.8 ACRES +/-

APPROXIMATE
LOCATION OF EXISTING
GRAVEL DRIVEWAY

EXISTING SHED
FOOTPRINT = .000 SF

APPROXIMATE
LOCATION OF EXISTING
DRAINFIELD

EXISTING VEALS

APPROXIMATE
LOCATION OF EXISTING
GRAVEL DRIVEWAY

EXISTING PLUMP TANK

EXISTING SEPTIC TANK

EXISTING OVERHEAD
POWER LINE

EXISTING GRAVEL
CAR PARK AREA

EXISTING STRUCTURE
ON PILES

EXISTING STRUCTURE

EXISTING WELL

EXISTING STRUCTURE

EXISTING STRUCTURE
FOOTPRINT

EXISTING TREES

EXISTING WOOD
DECK AND STAIRS

APPROXIMATE LOCATION
OF EXISTING BOATHOUSE
FOUNDATION RUINS

EXISTING FIRE PIT

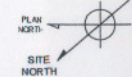
66' WIDE
ROADWAY
EASEMENT

BLUFFLINE APPROXIMATELY
800' SOUTHEAST OF HOME

NE 27° 20' 10" E 410.90'

VOL. 1405
PAGE 455
DOC. #597784
0.5 ACRES +/-

THE ORDINARY HIGH WATER
MARK TO BE DETERMINED BY
SURVEYOR



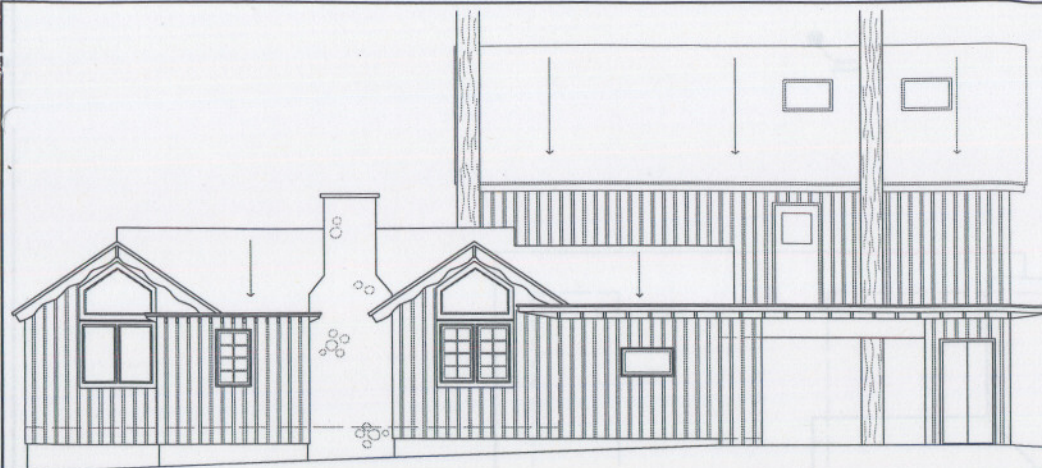
APPROXIMATE NEAR SHORELINE



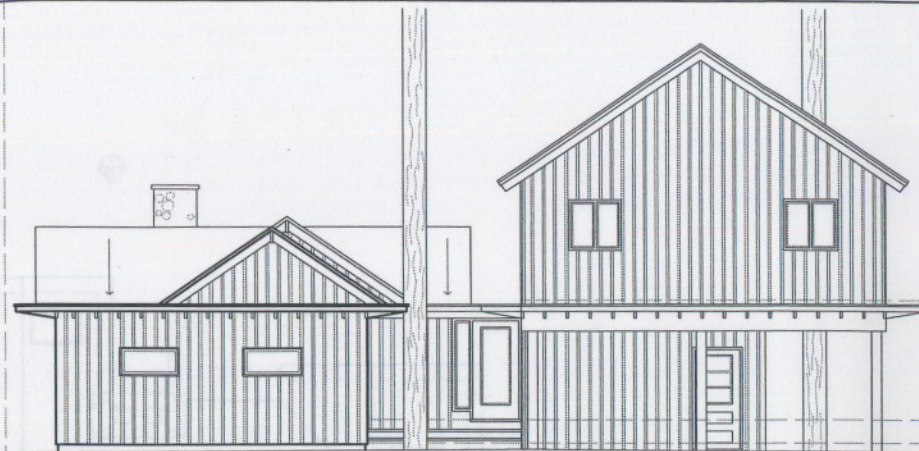
EXISTING SITE PLAN

1" = 40'-0"

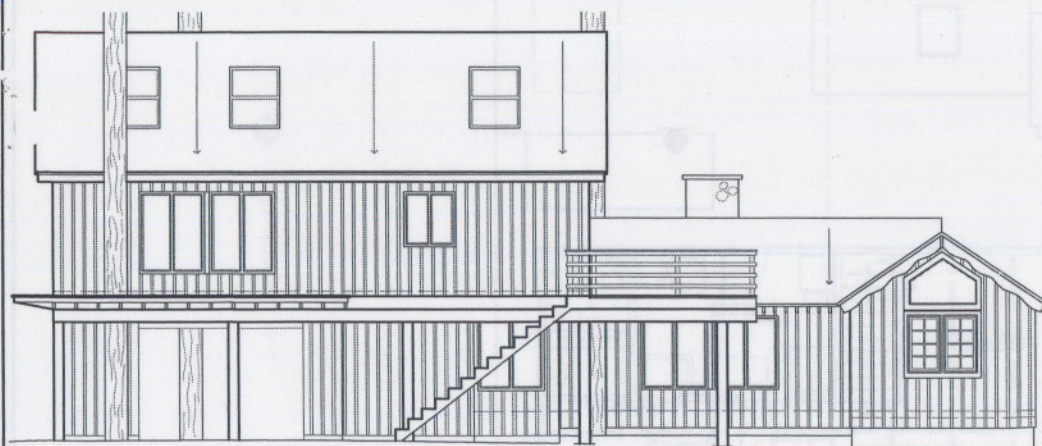
LATE 19th C.
1st 1/2" E 1" ON = 47' 0"
MEASURED 10-10-99



1
A0.4
EXISTING EAST EXTERIOR ELEVATION
1/8" = 1'-0"



2
A0.4
EXISTING NORTH EXTERIOR ELEVATION
1/8" = 1'-0"



3
A0.4
EXISTING WEST EXTERIOR ELEVATION
1/8" = 1'-0"



4
A0.4
EXISTING SOUTH EXTERIOR ELEVATION
1/8" = 1'-0"

TILTON RESIDENCE

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HUDSON, WI 54016-8015

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LICENSE NUMBER: 20126

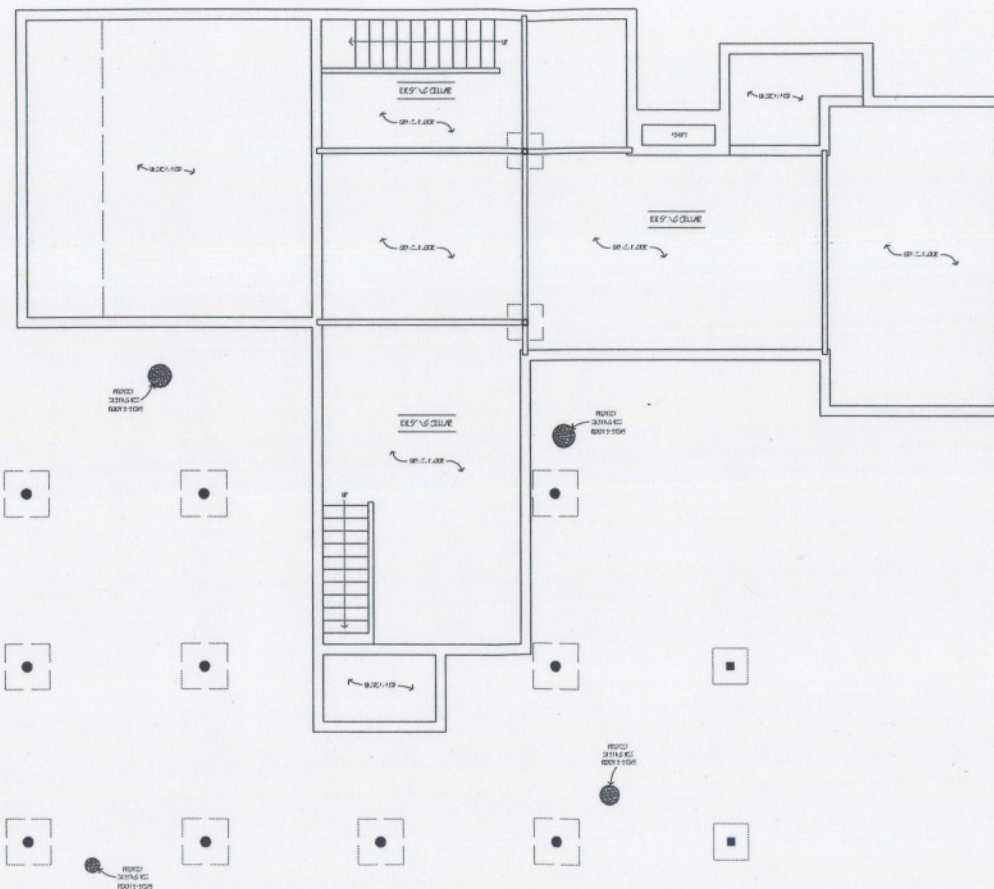
DATE: 10.19.04

SCALE: 1/8" = 1'-0"

DRAFT - NOT FOR CONSTRUCTION

EXISTING SECOND LEVEL FLOOR PLAN

DRAWING NUMBER
A0.4



1
AD-1
EXISTING FOUNDATION LEVEL FLOOR PLAN
1/8" = 1'-0"



TILTON RESIDENCE

278 WEST GROVE ROAD
HUDSON, WI 54016-8015

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LICENSE NUMBER: 20126

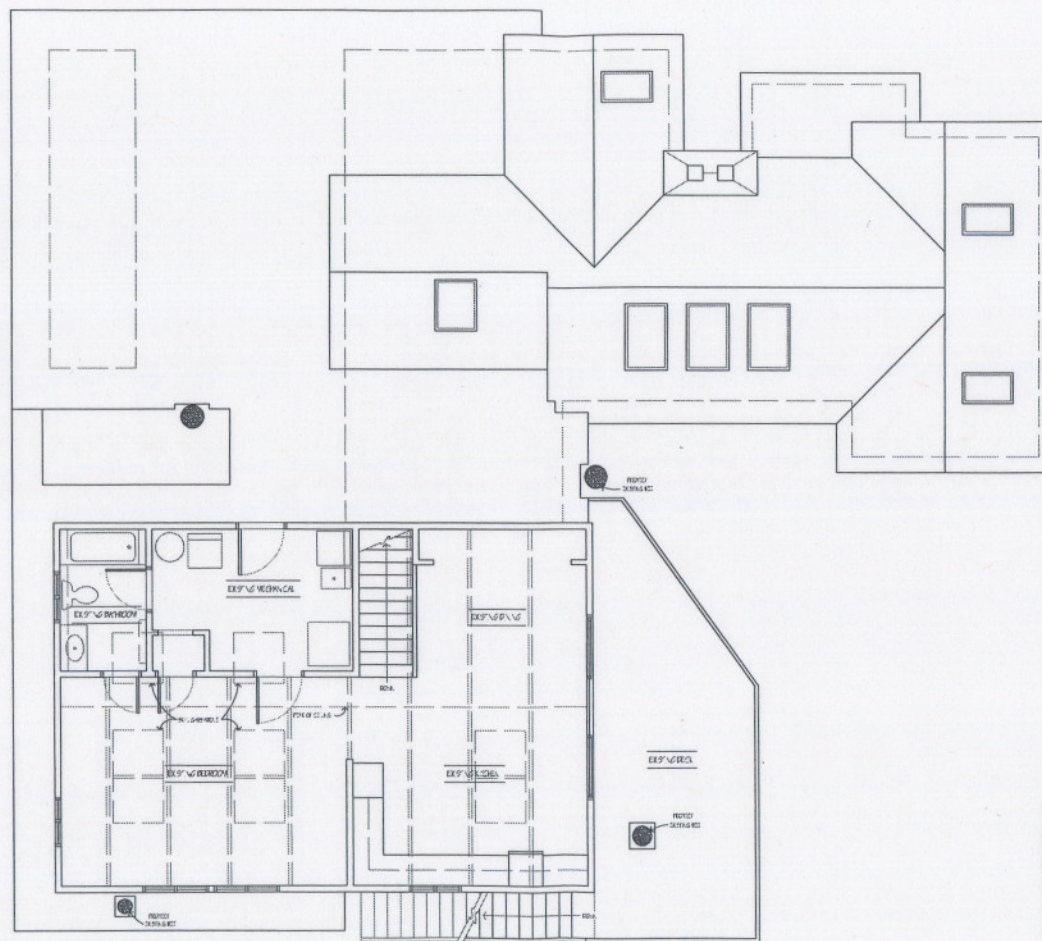
DATE: 10.19.04

SCALE: 1/8" = 1'-0"

DRAFT - NOT FOR CONSTRUCTION

EXIST. FOUNDATION LEVEL FLOOR PLAN

DRAWING NO.
A0.1



1
A0.3 EXISTING SECOND LEVEL FLOOR PLAN

1/8" = 1'-0"



TILTON RESIDENCE 278 WEST GROVE ROAD HUDSON, WI 54016-8015	
TWA THOMAS WHITCOMB ARCHITECT, INC. 6741 Plymouth Avenue North Golden Valley, MN 55427 (763) 593.4985 fax (763) 543.0204 <small>copyright Thomas Whitcomb Architect, Inc. 2004</small>	<small>I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly registered architect under the laws of the State of Minnesota.</small> LICENSE NUMBER: 20126 DATE: 10.19.04 SCALE: 1/8" = 1'-0" DRAFT - NOT FOR CONSTRUCTION
EXISTING SECOND LEVEL FLOOR PLAN	DRAWING NUMBER A0.3